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Arkansas Business and Economic Review

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Winter 1979

contents

Estimated Gross State Product for Arkansas 1960-77

The Environmentally Conscious Household: Products and Packages

Attitudes and Characteristics of Outdoor Recreationists Visiting Sites Near and Far From Interstate Highways

Taxation and Instability in African Governments

System Science: A Perennial Order for Marketing

The Upcoming Census: Prospects and Problems

Arkansas Economic Indicators

Arkansas Business and Economic Review

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3. National business and economic issues of general interest to the people of Arkansas; and
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Manuscripts and all inquiries should be addressed to Editor, *Arkansas Business and Economic Review*, Bureau of Business and Economic Research, College of Business Administration, University of Arkansas, Fayetteville, Arkansas 72701, Telephone (501) 575-4151.

ESTIMATED GROSS STATE PRODUCT FOR ARKANSAS 1960-1977

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Introduction

A common measure of the aggregate level of economic activity and direction of change in aggregate activity over time is Gross National Product. Quarterly estimates of GNP in the United States are made by the U.S. Department of Commerce and are readily available to businessmen, government officials, and academics. Annual figures for GNP, beginning with 1929, have also been published yearly in the "The Annual Report of the Council of Economic Advisers."[1] However, no comparable measure of economic activity on a state-by-state basis is published by the Department of Commerce. The purpose of this paper is to furnish estimates of the Gross State Product (GSP) for Arkansas, for the years 1960 through 1977, in total and by major economic sector, and to compare the performance of the state economy to that of the national economy over the same period.

The methodology used for the estimates of GSP was developed in 1965 by Kendrick and Jaycox[2] and revised in 1969 by L'Esperance, Nestel, and Fromm.[3] Essentially, the method employed is one of estimating value-added in the productive process in each of three sectors–the farm, non-farm,[4] and government–and summing the values-added to arrive at an estimate of GSP.

The presentation of results is divided into two major sections. The first section reviews the behavior of total GSP over the entire 1960-1977 period and compares the performance of the Arkansas economy with the national economy. The second section provides data by major sector and analyzes the behavior and contribution to GSP of each sector over the period. In both sections, estimates are provided for both current dollar and constant dollar GSP.

Arkansas Gross State Product, 1960-1977: An Overview

As indicated in Table I, current dollar Arkansas GSP in 1960 was $2.84 billion and was 0.56 percent of current dollar GNP. By 1970, current dollar Arkansas GSP had grown to $6.26 billion or 0.64 percent of GNP. This change represented an absolute increase in GSP of $3.42 billion over the ten-year period, a total percentage increase of 120.4 percent, and an average annual rate of growth of 8.22 percent. From 1970 to 1977, as inflation in the national economy began to accelerate, the growth of nominal GSP increased markedly; and, by 1977, total GSP stood at $13.83 billion which represented 0.73 percent of GNP. The absolute change over the seven-year period

TABLE I

COMPARISION OF GROSS NATIONAL PRODUCT AND ESTIMATED ARKANSAS GROSS STATE PRODUCT: 1960-1977
(Billions of Dollars)

Year	Current Dollar GSP	Current Dollar GNP	Ratio GSP/GNP	Constant Dollar GSP	Constant Dollar GNP	Ratio GSP/GNP
1960	2.842	506.0	0.56%	4.195	736.8	0.57%
61	3.081	523.3	0.59%	4.485	755.3	0.59%
62	3.338	563.8	0.59%	4.799	799.1	0.60%
63	3.609	594.7	0.61%	5.120	830.7	0.62%
64	4.067	635.7	0.64%	5.687	874.4	0.65%
65	4.322	688.1	0.63%	5.864	925.9	0.63%
66	4.713	753.0	0.63%	6.138	981.0	0.63%
67	4.944	796.3	0.62%	6.305	1007.7	0.63%
68	5.456	868.5	0.63%	6.664	1051.8	0.63%
69	5.892	935.5	0.63%	6.816	1078.8	0.63%
70	6.263	982.4	0.64%	6.912	1075.3	0.64%
71	6.948	1063.4	0.65%	7.305	1107.5	0.66%
72	7.917	1171.1	0.68%	7.917	1171.1	0.68%
73	9.152	1306.6	0.70%	8.429	1235.5	0.68%
74	10.114	1412.9	0.72%	8.591	1217.8	0.71%
75	10.847	1528.8	0.71%	8.496	1202.1	0.71%
76	12.142	1706.5	0.71%	9.063	1274.7	0.71%
77	13.834	1890.4	0.73%	9.803	1337.6	0.73%

Constant Dollar: 1972=100

Source: GNP--Economic Report of the President, January 1978, pp. 257 and 258;
GSP--estimated and converted to 1972 dollars using GNP industry deflators.

was $7.57 billion which constituted a total percentage increase of 120.9 percent and an average annual rate of change equal to 11.99 percent. The smallest yearly percentage increase in nominal GSP over the entire period was 4.9 percent (between 1966 and 1967) and the largest increase was 15.6 percent (between 1972 and 1973). In thirteen of the seventeen periods nominal GSP increased by 8 percent or more.

Between 1960 and 1970 when Arkansas GSP, measured in current dollars, grew at a rate of 8.22 percent, national output grew at a rate of 6.86 percent. From 1970 to 1977, national output rose at a rate of 9.8 percent compared with Arkansas' 11.99 percent. Over the entire period, national output increased at an average rate of 8.06 percent, while Arkansas GSP increased at an average rate of 9.76 percent.

In terms of constant dollars (1972=100), Arkansas GSP increased from $4.20 billion in 1960 to $9.80 billion in 1977 (See Table I). This change represents an increase of 133.3 percent over the entire period and an average annual rate of increase of 5.12 percent. In Figure 1, constant dollar GSP and constant dollar GNP are presented as a semilog graph to show the relationship of their behaviors over time. In general, particularly since the mid-sixties, the behavior of Arkansas GSP has been in consonance with the behavior of GNP.

Observing the periods 1960-1970 and 1970-1977, Table I, constant dollar GSP increased from $4.20 billion to $6.91 billion in the first period and from $6.91 billion to $9.80 billion in the second. In the earlier period, the change in real output was $2.71 billion representing an increase of 64.5 percent and an average annual rate of increase of 5.12 percent. In the later period, the constant dollar increase was $2.89 billion representing an increase of 41.8 percent with the same average annual rate of increase of 5.12 percent. Finally, it should be noted that although the average annual rate of real growth in Arkansas GSP was 5.12 percent, year-to-year changes in constant dollar GSP ranged from an 11.1 percent increase between 1963 and 1964 to a 1.1 percent decrease between 1974 and 1975, a national recession period.

While Arkansas GSP experienced an annual rate of increase of 5.12 percent during both periods, 1960-1970 and 1970-1977, and the overall period, 1960-1977, constant dollar GNP was experiencing somewhat slower rates of change. During the overall period, the average annual rate of increase for constant dollar GNP was 3.57 percent. This overall average rate of increase was lower than the early period, 1960-1970, rate of 3.85 percent but higher than the later period, 1970-1977, rate of 3.17 percent.

In the last column of Table I is presented the ratio of constant dollar Arkansas GSP to constant dollar GNP for the period 1960-1977. The ratio shows an upward trend, excepting the years immediately following 1964, reaching the maximum of 0.73 percent in 1977. Such a pattern is consistent with the results showing Arkansas constant dollar GSP increasing at an average annual rate of 5.12 percent while constant dollar GNP increased at an average rate of 3.57 percent.

In most of the periods, acceleration in the growth rate of GNP is accompanied by acceleration in the growth rate of GSP, and a slowing of the rate of change in GNP is accompanied by a deceleration in the rate of change in GSP. The two exceptions are the periods between 1964-65 and 1976-77. Between 1964 and 1965 national output grew at a rate slightly faster than for the previous year while Arkansas GSP showed a substantial decline in the rate of growth from 11.1 percent in the previous period to 3.1 percent. On the other hand, between 1976 and 1977, the rate of growth in national output declined while the rate of growth in Arkansas GSP increased from 6.7 percent between 1975 and 1976 to 8.2 percent between 1976 and 1977. In this connection, it should also be noted that while the nation's rate of growth in real output slowed from 3.85 percent between 1960 and 1970 to 3.17 percent between 1970 and 1977, Arkansas' rate of real growth remained stable at 5.12 percent over the same two periods of time.

The data seem to indicate, then, that generally: (1) year-to-year changes in the direction of growth rates of Arkansas GSP can be predicted by correctly estimating the direction of change in growth rates of GNP; (2) the greater the magnitude of change in the year-to-year growth rate of GNP, the greater the magnitude of change in the year-to-year growth rate of Arkansas GSP; (3) the exact magnitude of change in year-to-year growth rates of Arkansas GSP is not predictable from changes in year-to-year growth rates of GNP.

Gross State Product 1960-1977: Sector Analysis

Tables II-VI provide information on Arkansas GSP on a sector basis. In Tables II and III are presented sector contributions, in millions of dollars and in percentage in current and constant dollars, respectively, for the years 1960, 1970, and 1977.

Observing the constant dollar changes shown in Table III, a change in the relative composition of GSP can be observed for the period reported. In 1960, manufacturing at 17.1%, government at 15.5%, and farm at 15.3% composed 47.9 percent of Arkansas GSP. Also in 1960, wholesale-retail trade at 14.9%, finance-insurance-real estate at 11.0%, and services at 9.5% made up 35.4

FIGURE 1

GSP (ARKANSAS) AND GNP

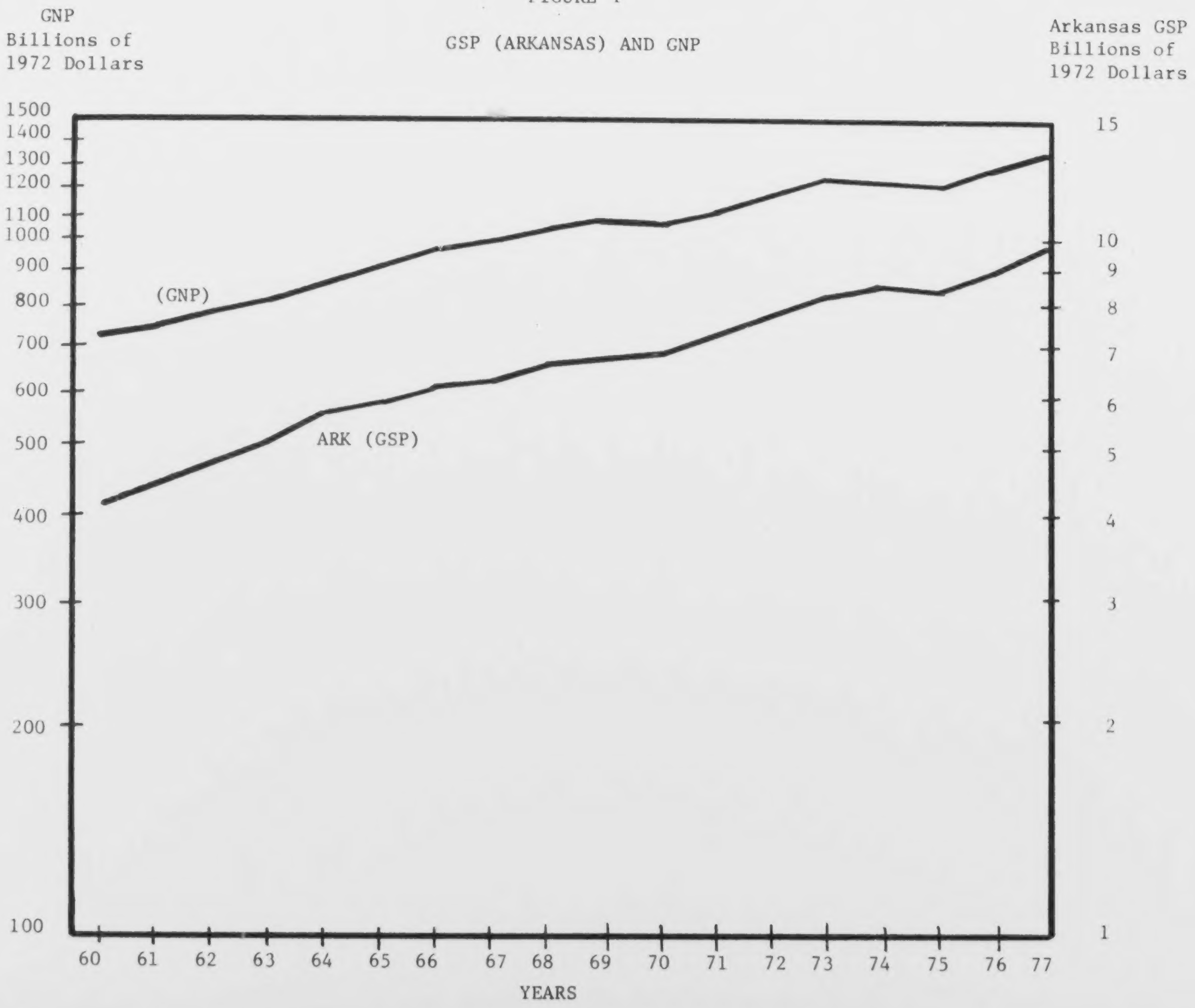

TABLE II

CURRENT DOLLAR ARKANSAS GROSS STATE PRODUCT SECTOR CONTRIBUTION FOR SELECTED YEARS

Sector	CURRENT DOLLARS (Millions) 1960	1970	1977	CURRENT DOLLAR PERCENT CONTRIBUTION* 1960	1970	1977
Farm	438.60	709.20	1185.10	15.4	11.3	8.6
Mining	63.44	80.28	210.21	2.2	1.3	1.5
Construction	121.23	257.81	722.78	4.3	4.1	5.2
Manufacturing	597.03	1578.22	3634.05	21.0	25.2	26.3
Wholesale/Retail Trade	446.97	1022.96	2368.87	15.7	16.3	17.1
Finance, Insurance, Real Estate	317.23	737.24	1567.70	11.2	11.8	11.3
Transportation, Communication, Public Utilities	307.73	543.90	1262.55	10.8	8.7	9.1
Services	239.45	609.73	1365.79	8.4	9.7	9.9
Government	310.28	724.07	1516.63	10.9	11.6	11.0
TOTAL	2841.96	6263.41	13833.68	100.0	100.0	100.0

* Totals may not sum due to rounding

Source: Estimated

TABLE III

CONSTANT DOLLAR ARKANSAS GROSS STATE PRODUCT SECTOR CONTRIBUTION FOR SELECTED YEARS

Sector	CONSTANT DOLLARS (Millions) (1972=100)			CONSTANT DOLLAR PERCENT CONTRIBUTION*		
	1960	1970	1977	1960	1970	1977
Farm	640.29	851.38	806.19	15.3	12.3	8.2
Mining	72.50	87.74	84.05	1.7	1.3	0.9
Construction	242.95	306.19	490.02	5.8	4.4	5.0
Manufacturing	718.45	1642.27	2593.89	17.1	23.8	26.5
Wholesale/Retail Trade	623.39	1090.58	1656.55	14.9	15.8	16.9
Finance, Insurance, Real Estate	460.42	803.10	1222.85	11.0	11.6	12.5
Transportation, Communication, Public Utilities	386.59	607.03	953.59	9.2	8.8	9.7
Services	400.42	670.03	927.84	9.5	9.7	9.5
Government	650.47	853.86	1068.05	15.5	12.4	10.9
TOTAL	4195.48	6912.18	9803.03	100.0	100.0	100.0

*Totals may not sum due to rounding

Source: Estimated

percent of the GSP. The final three sectors, transportation-communication-public utility at 9.2%, construction at 5.8%, and mining at 1.7% constituted 16.7 percent of the total real output. Seventeen years later, the composition and ranks had changed noticeably. The largest three producing sectors were manufacturing at 26.5%, wholesale-retail trade at 16.9%, and finance-insurance-real estate at 12.5% constituting 55.9 percent of the GSP. The middle three sectors in terms of real output were government at 10.9%, transportation-communication-public utility at 9.7%, and services at 9.5% composing 30.1 percent of the GSP. The final three industries were farm at 8.2%, construction at 5.0%, and mining at 0.9% now making up only 14.1 percent of the Arkansas GSP.

In Tables IV and V, dollar and percentage changes are shown by sector for three selective time periods. In terms of current dollars, as indicated in Table IV, the fastest growing sectors during the period 1960-1970 were manufacturing at 164.3%; services, 154.6%; government, 133.4%; and finance-insurance-real estate, 132.4%. During the second period, 1970-77, however, construction, mining, transportation-communication-public utility, and wholesale-retail trade were the largest growth sectors in terms of percentage increase. Also, in terms of current dollar increase, manufacturing remained the largest contributor to the increase. Over the entire period, the largest percentage gains occurred in manufacturing at 508.7%; construction, 496.2%; services, 470.4%; wholesale-retail trade, 430.9%; and finance-insurance-real estate, 394.2%. Thus, these five sectors contributed 72.2 percent of the total current dollar increase in Arkansas GSP over the period 1960-1977.

When the data are adjusted for price level changes, a different pattern of growth emerges, Table V. Between 1960 and 1970, the largest percentage increase still occurred in manufacturing at 128.6%, but the wholesale-retail-trade sector replaced services as the second strongest growth sector. Moreover, the government sector which showed the third largest percentage increase in current dollar changes fell to seventh in constant dollar changes, while finance-insurance-real estate moved to the third position in terms of constant dollar percentage increase.

During the period 1970 through 1977, in real terms, construction remained the fastest growing sector, but mining fell to the eighth position. Manufacturing recorded the second largest percentage increase followed by transportation and finance-insurance-real estate. The mining and farm sectors recorded absolute declines in real output between 1970 and 1977. Over the entire period, the ranking from highest to lowest in terms of percentage of increase in real output was: manufacturing, wholesale-retail trade, finance-insurance-real estate, trasnportation-communications, public utilities, services, construction, government, farm, and mining. Furthermore, in real terms, between 1960 and 1977 the top five growth sectors contributed almost 85 percent to the total change in GSP, Table V.

The effect of these changing growth patterns is reflected in the change in the sector contribution as shown in Table III. During the period 1960 through 1977, the manufacturing sector remained the largest contributor to Arkansas GSP, increasing its share from 17.1 to 26.5 percent during the period. The sectors that were second and third, government and farm, dropped to the fourth and seventh positions, respectively, during the period; meanwhile wholesale-retail trade and finance-insurance-real estate, which were in positions four and five in 1960, moved to positions two and three, respectively, in 1977. Additionally, the top three contributing sectors in 1977 accounted for over one-half of the total real output in that year.

In Table VI the gross product is presented by sector for both the United States and Arkansas for the year 1977. It can be seen from the table that the sectors ranking one–manufacturing, two–wholesale-retail trade and three–finance-insurance-real estate, are the same for both Arkansas and the United States. In the United States, these three sectors contributed 57.7 percent of GNP; in Arkansas, these same three sectors contributed 55.9 percent of the state product. In the United States, the industries ranking four, five, and six were government, services, and transportation-communications-public utilities, respectively. These three sectors contributed 34.2 percent of the GNP. In Arkansas, government ranked fourth, transportation-communications-public utilities ranked fifth and services ranked sixth; and these three sectors combined to produce 30.1 percent of the GSP. In the United States, construction ranked seventh; farm, eighth; and mining, ninth with the sector producing 8 percent of the GNP. In Arkansas, the same three sectors–with farm, seventh; construction, eighth, and mining, ninth–combined to produce 14.1 percent of the gross state product; and, as could be anticipated, a major difference is observed between the Arkansas farm product at 8.2% and the United States farm product at 2.6%.

Summary

Arkansas Gross State Product was estimated for the years 1960 through 1977 utilizing a modification of the Kendrick-Jaycox methodology. The Arkansas Gross State Product measured in constant dollars, increased from $4.2 billion in 1960 to $9.8 billion in 1977. This change represented an increase of 133.3 percent and an average rate of increase of 5.12 percent. The Arkansas GSP annual rate of growth of 5.12 percent was higher than the average annual rate of increase at 3.57% for constant dollar GNP for the 17-year period. With minor exceptions, it was noted that the behavior of GSP was consistent with the behavior of GNP. That is, GSP tended to increase as

TABLE IV

CURRENT DOLLAR ARKANSAS GROSS STATE PRODUCT SECTOR CHANGES FOR SELECTED YEARS

	CURRENT DOLLAR CHANGES (Millions)			PERCENT CHANGE		
Sector	1960-70	1970-77	1960-77	1960-70	1970-77	1960-77
Farm	270.6	475.9	746.5	61.7	67.1	170.2
Mining	16.9	129.9	146.8	26.6	161.8	231.4
Construction	136.6	465.0	601.6	112.7	180.4	496.2
Manufacturing	981.2	2055.8	3037.1	164.3	130.3	508.7
Wholesale-Retail Trade	576.0	1345.9	1921.9	128.9	131.6	430.0
Finance, Insurance, Real Estate	420.0	830.5	1250.5	132.4	112.6	394.2
Transportation, Communication, Public Utilities	236.2	718.7	954.9	76.8	132.1	310.3
Services	370.2	756.1	1126.3	154.6	124.0	470.4
Government	413.8	792.5	1206.3	133.4	109.5	388.8
TOTAL	3421.5	7570.3	10991.9	120.4	120.9	386.8

Source: Estimated

TABLE V

CONSTANT DOLLAR ARKANSAS GROSS STATE PRODUCT SECTOR CHANGES FOR SELECTED YEARS

	CONSTANT DOLLAR CHANGES (Millions of 1972 Dollars)			PERCENT CHANGE		
Sector	1960-70	1970-77	1960-77	1960-70	1970-77	1960-77
Farm	211.1	- 45.2	165.9	33.0	- 5.3	25.9
Mining	15.2	- 3.6	11.6	21.0	- 4.1	16.0
Construction	63.2	183.8	247.0	26.0	60.0	101.7
Manufacturing	923.8	951.6	1875.4	128.6	57.9	261.0
Wholesale-Retail Trade	467.2	566.0	1033.2	74.9	51.9	165.7
Finance, Insurance, Real Estate	342.7	419.8	762.5	74.4	52.3	165.6
Transportation, Communication, Public Utilities	220.4	346.6	567.0	57.0	57.1	146.7
Services	269.6	257.8	527.4	67.3	38.5	131.7
Government	203.4	214.2	417.6	31.3	25.1	64.2
TOTAL	2716.6	2891.0	5607.6	64.8	41.8	133.7

Source: Estimated

TABLE VI

CONTRIBUTION TO GROSS PRODUCT BY SECTOR-1977
UNITED STATES AND ARKANSAS

	Arkansas			United States		
Sector	Millions of 1972 Dollars	Percent	Rank	Millions of 1972 Dollars	Percent	Rank
Farm	806.19	8.2	7	33824	2.6	8
Mining	84.05	0.9	9	14746	1.1	9
Construction	490.02	5.0	8	56971	4.3	7
Manufacturing	2593.89	26.5	1	335242	25.4	1
Wholesale-Retail Trade	1656.55	16.9	2	223341	16.9	2
Finance, Insurance, Real Estate	1222.85	12.5	3	205623	15.5	3
Transportation, Communications, Public Utilities	953.59	9.7	5	128382	9.7	6
Services	927.84	9.5	6	158851	12.0	5
Government	1068.05	10.9	4	165704	12.5	4
TOTAL*	9803.03	100.0	NA	1322684	100.0	NA

Source: Arkansas GSP, estimated; and GNP, compiled from Survey of Current Business, U.S. Department of Commerce, July, 1978, and State Farm Income Statistics Supplement, U.S. Department of Agriculture, September, 1978. GNP compilation differs from published total of $1332.7 billion by U.S. Department of Commerce by 0.76 percent.

* Totals may not sum due to rounding.

GNP increased, and GSP decreased when GNP decreased. And it was noted that the ratio of Arkansas GSP to GNP increased from 0.57% in 1960 to 0.73% in 1977.

On a sector-by-sector analysis, the structure of Arkansas GSP was observed to resemble closely the sector-by-sector structure of GNP in 1977. Measured in constant dollars, the three major sectors for both GSP and GNP were first, manufacturing; second, wholesale-retail trade; and third, finance-insurance-real estate. In the year 1977, these three sectors contributed 57.5 percent of GNP in the United States and 55.9 percent of the Gross State Product in Arkansas. Among the other sectors, the major difference appeared in the farm sector which produced 8.2 percent of the Arkansas GSP and only 2.6 percent of GNP.

FOOTNOTES

[1] See, for example, U.S. President, *Economic Report of the President Together with the Annual Report of the Council of Economic Advisers,* (Washington, Government Printing Office, 1979).

[2] John W. Kendrick and C. Milton Jaycox, "The Concept and Estimation of Gross State Product," *The Southern Economic Journal,* (October, 1965), pp. 153-168.

[3] W.L. L'Esperance, G. Nestel, and D. Fromm, "Gross State Product and an Econometric Model of a State," *Journal of the American Statistical Association,* (September, 1969), pp. 788-789.

[4] The non-farm sector is composed of mining, contract construction, manufacturing, wholesale-retail trade, finance-insurance-real estate, transportation-communication-public utilities, and the service industries.

THE ENVIRONMENTALLY CONSCIOUS HOUSEHOLD: PRODUCTS AND PACKAGES

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INTRODUCTION

A main societal concern in recent years has been pollution and its accompanying effects. Indeed, the problem of waste has spawned the environmentalist who has served to monitor the tradeoff between the traditional emphasis on economic growth and the quality of life for man within his environment (Berber, 1975). For the private enterprise system, this has taken the form of a challenge to effectuate both a high standard of affluence and a clean environment (Quinn, 1971); for the individual consumer, this has meant exposure to a proliferation of public service advertising which expounds the deterimental consequences of various products, product ingredients, or product packaging. In this latter regard, three suspect items merit designation. First, phosphorus (phosphate), a nonbiodegradeable cleaning agent, has been identified as a key element in hastening the ruination of lakes, rivers, and streams (Reid, 1972); second, the propellant in aerosol cans has been reproached as a catalytic agent capable of decomposing the ozone layer of the earth's stratosphere (Hammond and Maugh, 1974); and third, the nonreturnable, throwaway package has been an eyesore cluttering the landscape.

In view of the immense effort and expenditure exerted in behalf of environmental protection through the consumer channel, it seems appropriate to ask how successful this advertising campaign has been. Certainly an individual consumer could demonstrate concern about pollution through the purchase of household products and services which are not known to be injurious to the environment.

The primary purpose of this research was to ascertain whether the environmental impact of a product's content or package is a major consideration in the purchase decision. A secondary function of this study was to detect dissimilarities between ecology and nonecology minded groups relative to various environmental aspects. Specifically, determination will be made as to 1) the level of environmental awareness with respect to pollution and its sources, and 2) the attitude toward governmental regulation through legislative reform.

HYPOTHESES

An *a priori* assumption in conducting this study was that each member of the adult U.S. population has been exposed to pollution-related information and, therefore, is a product of selective perception, selective exposure, and selective retention, i.e., perception, exposure, and retention of media, messages, and appeals which support an individual's predispositions (Markin, 1969; Engel, Wales, and Washaw, 1975). Thus, an acceptable measure of the impact of environmental advertising in household product purchase decisions would be the extent to which individuals are 1) cognizant of household products whose usage is damaging to the environment, 2) aware of household associated sources of pollution, 3) discontented with the quantity of pollution information on household related products, and 4) proponents of government regulation to prohibit the sale of household products whose contents or packages have a recognized detrimental effect upon the environment. These lead to a hypothesis, pertinent to each of the above designated groups, which postulates that individuals concerned about pollution will be demonstrably superior in each of the aforementioned designated areas.

THE METHODOLOGY

In order to test the hypothesis for each area, a two-stage public opinion survey was designed and administered in the Evansville (IN-KY) Standard Metropolitan Statistical Area (SMSA) which has approximately 350,000 residents. Albeit relatively geographically isolated, the SMSA represented a wide range of incomes, occupations, ages, and education.

Subjects were selected by an area sampling technique as follows: sample census tracts were randomly chosen from the SMSA and sampling points were randomly selected within census tracts. Interviewers were directed to commence at the sampling point and to continue contacting households in a clockwise direction until the proportionate number of respondents was reached. A multistage study was designed to avoid sensitizing the respondents to the purpose of the study. The first stage of the project consisted of two parts. The first posed the open-ended question, "What are the three most important problems facing residents of your area?" to determine if the respondents were concerned about pollution. It was conjectured that if pollution was a consequential issue, it would emerge from an unstructured open-ended question (Kassarjian, 1971). The second part was a projective instrument consisting of a shopping list (Haire, 1950; Webster and Pechman, 1970) modified to include stimuli about a package and a product which represented nationally recognized household sources of pollution – a soft drink in throwaway container and a phosphate laundry detergent.[1] The shopping list is illustrated in Appendix A.

Justification of the projective instrument stems from the fact that consumers are often unaware of many of the reasons for their purchase decisions (Boyd, 1972). Moreover, direct questions demand answers that are logical, in vogue, and/or socially acceptable (Haire, 1950). This is especially true of environmental considerations because of the intense publicity and emotion accompanying the ecology movement. Since answers to direct questions about ecological considerations in household procurement decisions may not reflect the true concern about pollution, a projective instrument is obligatory to ascertain attributes contemplated in the purchase decision.

In order to answer any questions as well as to increase returns, these instruments were delivered personally with instructions for the respondents to complete them at their leisure and return them by mail. Of the 200 households which initially received the two instruments, 154 completed the first stage.

After completion of the first two instruments, another instrument, utilizing thirteen direct statements, was mailed to the respondents. These statements probed three topic areas, namely, sources of pollution, quantity of pollutant information available relative to household products or their packages, and desire for prevention of sale of pollutant products or packages. The statements are reproduced in Appendix B.

For statements one through eight, two questions were posed: (a) "How much is there now?" and (b) "How much should there be?" Respondents answered each question by checking a seven-point scale labeled from minimum to maximum, 1 to 7, respectively. A check of 1 signified a minimum of concern and a check of 7 specified a maximum. Satisfaction was measured by the difference between the responses to how much there is now and to how much there should be.

Statements nine through thirteen employed a Likert Scale and utilized a one to five rating system from "strongly agree" to "strongly disagree." Each statement was formed in such a way that a high score, toward 5, indicated that the sale of any known pollutant should be prevented, conversely, a low score, toward 1, denoted that sale of pollutants should not be prohibited. Of the 154 respondents who returned stage one, 122 completed stage two.

ANALYSIS OF SURVEY DATA

Measurement of Concern About Pollution

The measurement of concern about pollution was secured from the open-ended question, "What are the three most important problems facing residents of your area?" Strict coding procedures, which required virtually literal interpretation of the listings, were used to analyze the responses.

The answers to this question were used to classify the respondent as being concerned or not concerned about pollution. This classification is used throughout the remainder of the study. Exhibit 1 reveals that forty-four respondents, 36.1%, mentioned some aspect of pollution as one of the three problems facing their residential areas.

Pollution Concern and Product Awareness

The first hypothesis postulated that individuals demonstrating concern for pollution would be more aware of household products with content or packaging detrimental to the environment. The response to the shopping list was used to test this hypothesis.

The same strict coding procedures which were applied to the open-ended question were employed to analyze the responses to the shopping list. The respondent had to specifically state that the person compiling the shopping list was pollution conscious and cite one or both of the stimuli products as the factor(s) influencing the respondent's judgment. Exhibit 2 recapitulates the results of this analysis and discloses that 59.1% of those classified as concerned about pollution from the open-ended question identified either or both of the stimuli on the shopping list. Interestingly, a rather large percentage, 38.9%, of those categorized as not concerned specified the pollutant properties of these household products. This unanticipated finding might be ascribed to the extended publicity surrounding these two types of pollution. A chi-square analysis of the data in Exhibit 2 demonstrated that the concerned and not concerned groups were significantly dissimilar, with $X^2 = 8.277$, df = 3p = .05, in identification of household products with polluting properties.

Awareness of Sources of Pollution

Exhibit 3 summarizes the analysis of responses to statements 1-4 in Appendix B and reveals that, of the four sources of pollution from households, the not concerned group ascribed higher awareness ratings to automobiles and packages while the concerned group produced higher awareness ratings to sewage and other household products. However, awareness was significantly dissimilar on only two sources, i.e., autos and households with t-values of -2.17 and 2.54, respectively and $p < .05$. Thus, the null hypothesis cannot be rejected.

Further, an analysis of variance did not disclose an overall significant difference in awareness of household sources of pollution with an F value of .03. However, a significant interaction existed between awareness of sources of pollution and concern for pollution with F = 6.76 and $p < .05$. The striking main effect with an F value 7.07 and $p < .05$ for awareness of groups demonstrates that respondents were not aware of household pollution as being equally prominent for all sources.

Pollution Information Dissatisfaction

Exhibit 4 contains the arithmetic means of (b) How much should there be? minus (a) How much is there now? to statements five through eight, Appendix B. These data were utilized to assess the hypothesis that individuals concerned about pollution are more dissatisfied with the amount of environmental information on household related products. These data do not reveal support for the above hypothesis. The concerned group tended to be more dissatisfied with the amount of environmentally associated information than the not concerned group but not significantly so. For all four information sources, the concerned group gave higher dissatisfaction ratings but t-tests were significant for only one source, that is, television with a t-value of 2.02, $p < .05$. No significant difference was present for newspaper, radio, and advertising.

An analysis of variance did not reveal an overall significant difference or a significant interaction. However, there was a significant main effect for sources of pollutant related information, with an F ratio of 12.36 at $p < .05$, which clearly indicates that the respondents did not rate the sources as being equally effective.

Attitude Toward Government Action

Attitude toward governmental intervention through legislation prohibiting the sale of household products that pollute was determined by the responses to statements nine through thirteen in Appendix B. Exhibit 5 summarizes the results which support the above hypothesis. For all five product categories the concerned group displayed a more favorable attitude for government prohibition than did the not concerned group. T-tests were significant on all product groups except the "other" category.

The analysis of variance results in Exhibit 6 show an overall difference in attitudes toward government prohibitions between the groups. Those concerned have a significantly more favorable attitude toward government prohibition with an F value of 16.99, $p < .05$. Also, there was a significant interaction, an F value of 12.61, $p < .05$, between products and groups signifying that the difference between groups was not consistent across product categories. The significant main effect for attitude, an F value of 4.97, $p < .05$, shows that the respondents did not rate pollution as being equally important for all product categories.

Exhibit 1

THREE MOST SERIOUS PROBLEMS FACING RESIDENTS OF YOUR AREA

(open-ended question)

Problem Category	Number of Responses in Category (n = 253[1])	Percent of Responses in Category
Economy and Cost of Living	101	82.8
Environment, Ecology and Pollution	44	36.1
Shortages	31	25.4
All Other	77	63.1

[1] Does not total 366 (122 x 3 responses) because some respondents did not list three responses.

Exhibit 2

POLLUTION CONCERN AND PRODUCT AWARENESS

(Shopping List)

	Pollution Concern			
	Concerned (n = 44)		Not Concerned (n = 78)	
Factor Influencing Judgment	Respondents	(%)	Respondents	(%)
Package Only	10	(22.7)	13	(16.7)
Contents Only	7	(15.9)	10	(12.8)
Both Packages and Contents	9	(20.5)	5	(9.4)
No Factor Cited	18	(40.9)	50	(64.1)

$X^2 = 8.277$, df = 3($p < .05$), one-tailed test

Exhibit 3

AWARENESS OF HOUSEHOLD SOURCES OF POLLUTION[a]

Corresponding Statement in Appendix B	Household Pollution Source	Concerned (n = 44)	Not Concerned (n = 78)	t	Exact Probability of t
1	Auto	4.6	5.2	- 2.17[b]	.03
2	Package	4.9	5.4	- 1.67	.03
3	Sewage	5.0	4.7	1.65	.10
4	Other Household Products	4.9	4.2	2.50[b]	.01

[a] Based on a seven-point scale ranging from seven (maximum) to one (minimum) for question (a).

[b] $p < .05$

Exhibit 4

AVERAGE DISSATISFACTION WITH AMOUNT OF POLLUTION RELATED INFORMATION AVAILABLE[a]

Corresponding Statement in Appendix B	Information Source	Concerned (n = 44)	Not Concerned (n = 44)	t	Exact Probability of t
5	Newspaper	3.41	2.96	1.22[b]	.22
6	Radio	3.32	2.95	1.05[b]	2.94
7	Television	3.00	2.33	2.02[b]	.04
8	Advertising[c]	3.41	3.04	1.00[b]	.32

[a] Based on question (b) How much should there be? minus question (a) How much is there now?

[b] $p < .05$

[c] Nonpersonal communications under clear sponsorship.

Exhibit 5

AVERAGE ATTITUDE TOWARD LEGISLATION PREVENTING SALE OF POLLUTANT PRODUCTS[a]

Corresponding Statement in Appendix B	Item	Concerned (n = 44)	Not Concerned (n = 78)	t	Exact Probability of t
9	Phosphate Detergent	3.66	2.86	4.06^b	.0002
10	Insecticides	4.18	3.32	4.83^b	.0004
11	Phosphate Dishwater	3.64	3.21	2.26^b	.0240
12	Throwaway Containers	3.73	3.00	4.17^b	.0001
13	Other Household Products	3.09	2.96	.639	.5314

[a] Based on a five-point scale ranging from five (strongly agree) to one (strongly disagree).

[b] $p < .05$

Exhibit 6

COMPARISON OF ATTITUDE TOWARD LEGISLATION PREVENTING SALE OF POLLUTANT PRODUCTS
(Analysis of Variance)

Source	d.f.	$\bar{x}^2$	F	Exact Probability of F
Groups	1	48.94	16.99^a	.0002
Errors (groups)	120	2.88		
Trials (products)	4	6.76	12.61^a	.0000
Group x Trials	4	2.63	4.91^a	.0010
Error (Trials)	480	.54		

[a] $p < .05$

CONCLUSIONS

This analysis corroborates the hypothesis that consumers categorized as concerned about pollution problems are more cognizant of products and packages that are injurious to the environment. This was evidenced by the significantly higher portion of respondents from this classification who specifically designated the harmful properties of the stimuli in the projective instrument. However, for both the concerned and non-concerned groups the respondents were more aware of the pollution attributes of a product's packaging than its contents. Two reasons perhaps explain this discrepancy: first, the high visibility of package pollution elicits more awareness of its existence; second, and possibly of more importance however, several states either through recent legislation, referendums, or general activity within the legislature have caused the disposable container controversy to remain under public scrutiny. Since certain state and local governments have also banned the sale of phosphate detergents, the lack of current publicity has possibly served to diminish the potential danger in the minds of many consumers.

The second hypothesis, awareness of the amount of pollution from household sources was not supported. The analysis of this hypothesis revealed that those classified as not concerned about pollution tended to be more aware than the concerned group of the amount of pollution coming from automobile and packaging sources. Again, publicity probably accounts for this finding. Recently, media coverage of these two sources has been heavy; therefore, regardless of one's concern for pollution, one could not help but be aware of these sources of pollution. Moreover, those concerned about pollution may conjecture that sufficient progress is being achieved in these two areas and be directing their efforts to other less publicized areas, hence the greater awareness by the concerned group of sewage and other household products as sources of pollution.

The amount of pollution information from the various sources did not emerge as a significant overall dissatisfaction although, as might be expected, the concerned group did express a higher average dissatisfaction with all sources. Since the average dissatisfaction rating was the lowest for this hypothesis, it appears that both groups feel sufficient household product pollution related information is available. This suggests that supplementary environmental information will not modify shopping behavior and that additional investment in certain types of pollution related public service advertising is unjustified. The fact that specific products were inadequately identified implies that environmental effects of products and packages are a minimal consideration in the purchase decision and thus, some alternative method, such as legislation, is requisite for the elimination of polluting products.

A key methodological issue that was stated earlier in the study should be reiterated: Direct questions about emotional issues receiving intense publicity, such as ecological concerns, may elicit answers that are considered socially acceptable. This possibly clarifies the seemingly contradictory findings on the projective instrument and the direct question instruments. Once the respondent, regardless of his concern for pollution, could detect the subject of the question, he would respond to please the researchers or the public. However, the projective instrument concealed the subject under investigation, and therefore, prevented the respondent from directing his answer to please anyone. Hence, future researchers should develop and refine projective or indirect instruments to measure pollution related dimensions.

SUMMARY

This research disclosed that respondents who demonstrated ecological concern on the projective instrument were aware of the environmental effects of household products and that they had a favorable attitude towards prohibiting the sale of polluting products. A large portion of the sample, almost 64 percent, was not concerned about the ecological impact of household products. While they indicating sufficient information is available concerning a product's environmental impact which in turn increased individual awareness of household sources of pollution, respondents were unable to identify such products. Therefore, it is unlikely that environmental effects are considerations in their purchase decisions. It is also improbable that increased environmental information will alter their shopping behavior. Hence, other methods, such as legislation, will be necessary to eliminate polluting products.

APPENDIX A

Projective Instrument – The Shopping List

Instructions:

First, please read the shopping list below. Try to project yourself into the situation as far as possible until you can more or less characterize the person who bought the groceries. Then write a brief description of this person's personality and character. Whenever possible, indicate what factors influenced your judgment.

1½	pounds of hamburger
1	loaf of sliced white bread
2	packages of frozen peas and carrots in butter sauce
1	carton soft drinks in throwaways
1	box phosphate laundry detergent
2	cans fruit salad
1	box instant potatoes au gratin

APPENDIX B

Direct Statements About Pollution[1]

1. The amount of air pollution coming from automobiles.
2. The amount of pollution from discarded packages.
3. The amount of water pollution coming from city sewage disposal.
4. The amount of pollution from household products.
5. The amount of information available from newspapers about the environmental effects of household products and their packages.
6. The amount of information available from radio about the environmental effects of household products and their packages.
7. The amount of information available from TV about the environmental effects of household products and their packages.
8. The amount of information in an advertisement about the environmental effects of household products and their packages.
9. Any detergent containing phosphates should not be sold.
10. Any insecticide that is harmful to the ecology should not be sold.
11. Dishwater soap should not be sold if it contains phosphates.
12. Throwaway bottles and cans should not be sold.
13. The government should not allow any household product that causes pollution to be sold.

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[1] Questions 1 through 8 had two stems asking: (a) how much is there now, and (b) how much should there be. The response to questions 9-13 was in the form of a Likert Scale with a one-five rating system ("strongly agree" to "strongly disagree").

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ATTITUDES AND CHARACTERISTICS OF OUTDOOR RECREATIONISTS VISITING SITES NEAR AND FAR FROM INTERSTATE HIGHWAYS

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INTRODUCTION

Outdoor recreation is important to the economic development of some areas in the state of Arkansas. The people who engage in outdoor recreation are influenced by a number of factors including the accessibility by interstate-freeway type highways. The main objective of this article is to compare the attitudes and characteristics of outdoor recreationists surveyed at recreational sites near and far from interstate-freeway type highways. This comparison should provide some insight into the importance of accessibility to the outdoor recreationist.

METHODOLOGY

In order to provide data for this evaluation, a survey was conducted in the recreational areas of Arkansas. The questionnaire, with the primary concern being accessibility by interstate-freeway type highways, was distributed to selected sites throughout the state. Sites readily accessible by interstate-freeway type highways were selected, then, sites with comparable facilities but remote to such highways were selected. Sites were widely distributed so that all the interstate-freeway type highways in the state would be included. This pairing technique encompassed state parks, national parks, national forests, Corps of Engineers projects, wildlife refuges, and Game and Fish Commission areas. The distribution of questionnaires began during the Summer of 1977 and concluded during the Fall of 1978. With very minor exceptions, all of the recreation sites were visited twice by the survey person and at different times of the year so that a more representative sample could be obtained. Survey questionnaries were distributed during the Summer of 1977, Spring of 1978, Summer of 1978, and the Fall of 1978 in selected hunting areas. The total number of questionnaires distributed was 1,750.

SURVEY RESULTS

The extent to which access influenced their choice of an outdoor recreational site was one of the major questions that the outdoor recreationists were asked to express their preferences about. The survey results indicated that 17.6 percent desired direct access and 41.5 percent desired convenient access. On the other hand, 27.9 percent desired no access, and 13.1 percent expressed a desire for remote access. Direct access was defined as 10 miles or under; convenient access, as 11 to 50 miles; and remote access, as over 50 miles. The attitude of outdoor recreationists seemed to be that direct access to interstates is really not very important. The more predominant view was that convenient access is more desirable.

The survey results also revealed the relative importance of access and the relative importance of the recreation area itself in site choice. It was found that 55.3 percent said access was of little or no importance while 44.8 percent said it was important in their decision. Interestingly, only 9.3 percent said it was very important; whereas, 24.7 percent said it was not important. The survey results concerning importance of area in site choice showed that 86.6 percent said the area itself was important while only 13.4 percent said it was of little or no importance. It is especially noteworthy that while 63.5 percent said the area itself was very important, only 6.3 percent said it was not important. The indication seems clear that it is the area itself that is more important to outdoor recreationists rather than access. Even though the recreationists' preference of area over access in choice of site is the comparative indication, a sizable minority did attribute importance to access in choice of site.

The remainder of this article shall attempt to provide insight into differences of attitudes and characteristics by those visiting sites near and those visiting sites far from interstate-freeway type highways. Shown in Exhibit 1 is a comparison of the different degrees of agreement concerning certain attitudes. Although a slightly larger percentage of visitors to remote sites than to near sites felt a need for more interstate-freeway type highways, recreationists in both areas, by small majorities, indicated no need for added interstates. Before the survey, one might have expected that a clear majority of visitors to recreation sites, particularly in the remote areas, would agree to the need for more interstates. Apparently, the lack of a majority, in itself, indicates that outdoor recreationists seek accessibility but not necessarily immediate access to the sites.

A comparison of responses by those interviewed near and far from interstates displayed no really major differences in view as to the need for better connecting roads from interstates to recreation areas. The most dramatic difference was that 8.0 percent of those far and only 3.9 percent of those near strongly disagreed as to this need. Of course, a substantial majority of both those far and near indicated agreement.

Those far from and near to interstates tended to disagree generally that the areas needed more traveler services. The greatest degree of disagreement was by those near to interstates. Apparently, no change in the amount of services available is desired by outdoor recreationists.

Exhibit 2 provides insight into the relative importance of access and the area itself by those in areas near and those in areas far from interstates. It is no great surprise to find that access to interstates tends to be of greater relative importance to those engaged in outdoor recreation in areas near interstates. On the other hand, the area itself is of considerably greater importance to all and especially to those far from the interstates.

The subject of attitude differentials relative to route choice is treated in Exhibit 3 which provides some insight with regard to those visiting areas near to or far from interstates. In the selection of a route, the availability of interstate-freeway type highways is rated as of little or no importance by 60.9 percent of those in areas far from interstates but by only 49.6 percent of those in areas near interstates. Consequently, greater relative importance is given to interstates by those in areas near interstates. An all-weather, secondary, road leading to the area is rated as very important by all, and by a considerably greater percentage than was found for interstates. The availability of scenic highways is rated as important by those near or far, especially by those in areas far from the interstates. This is apparently one of their motives for visiting areas far from interstates. There were no significant differences found concerning either the importance of directness or the importance of services in route choice.

Exhibit 4 provides a comparison of the relative importance of access to an interstate in the selection of a site for various types of outdoor recreation. The focal

Exhibit 1

ATTITUDE COMPARISONS BETWEEN VISITORS TO RECREATION AREAS NEAR AND FAR FROM EXISTING INTERSTATES

Attitudes	Strongly Disagree		Disagree		Agree		Strongly Agree	
	Near	Far	Near	Far	Near	Far	Near	Far
Arkansas needs more interstate-freeway type highways serving its outdoor recreational areas.	12.2%	16.5%	44.4%	37.8%	35.5%	36.0%	7.9%	9.7%
Arkansas needs better connecting roads from interstate-freeway type highways to recreational areas.	3.9%	8.0%	31.0%	26.8%	50;4%	47.8%	14.6%	17.3%
This area needs more traveler services, such as restaurants, motels, service stations, and the like.	16.7%	17.1%	47.8%	40.0%	27.9%	29 5%	7.6%	13.4%

Source: Survey conducted by the Authors.

Exhibit 2

THE RELATIVE IMPORTANCE OF ACCESS AND AREA IN SITE CHOICE BY VISITORS TO RECREATION AREAS NEAR AND FAR FROM EXISTING INTERSTATES

Attitudes	No Importance		Little Importance		Some Importance		Great Importance	
	Near	Far	Near	Far	Near	Far	Near	Far
Access to Interstate-freeway Type Highways	17.9%	28.8%	30.3%	30.8%	40.6%	32.4%	11.3%	8.1%
The Area Itself	5.2%	7.0%	7.2%	6.9%	25.5%	21.7%	62.1%	64.3%

Source: Survey conducted by the Authors.

Exhibit 3

ATTITUDE COMPARISONS REGARDING ROUTE SELECTION BETWEEN VISITORS TO RECREATION AREAS NEAR AND FAR FROM EXISTING INTERSTATES

Attitudes	No Importance		Little Importance		Some Importance		Great Importance	
	Near	Far	Near	Far	Near	Far	Near	Far
Interstate-freeway Type Highways Leading to Area	17.4%	30.2%	32.2%	30.7%	36.8%	29.9%	13.6%	9.2%
All-Weather (Secondary) Roads Leading to Area	4.1%	3.4%	6.6%	6.3%	33.3%	35.7%	56.0%	54.6%
Scenic Nature of Highway	5.9%	5.6%	14.7%	11.6%	39.9%	37.7%	39.6%	45.0%
Directness to Destination	5.7%	8.5%	20.7%	21.2%	41.5%	41.0%	32.1%	29.3%
Availability of Traveler Services	11.1%	12.1%	19.2%	20.4%	38.8%	40.5%	30.9%	26.9%

Source: Survey conducted by the Authors.

Exhibit 4

ATTITUDES COMPARISON REGARDING ACTIVITIES SELCTION BETWEEN VISITORS TO AREAS NEAR AND FAR FROM EXISTING INTERSTATES

Attitudes	No Importance		Little Importance		Some Importance		Great Importance	
	Near	Far	Near	Far	Near	Far	Near	Far
Hiking/Backpacking	30.5%	40.5%	23.2%	22.3%	32.5%	24.7%	13.9%	12.4%
Picnicking/Sightseeing	12.2%	22.6%	14.2%	18.2%	39.2%	32.0%	34.4%	27.2%
Fishing	18.1%	26.5%	18.4%	17.9%	30.4%	25.6%	33.1%	29.9%
Hunting	35.5%	43.9%	14.2%	16.4%	19.9%	18.6%	30.5%	21.2%
Camping	13.7%	20.5%	11.5%	15.9%	31.3%	30.2%	43.5%	33.5%
Boating/Skiing/Swimming	15.8%	21.2%	13.6%	18.3%	34.1%	30.4%	36.6%	30.1%
Visiting Historical Sites or Hobby and Cultural Centers	9.4%	19.1%	12.8%	18.1%	36.6%	31.7%	41.3%	31.0%

Source: Survey conducted by the Authors.

point of the comparison is whether visitors were near to or far from an interstate. For the recreation types interviewed in areas far from interstates, access was of greater relative importance to those engaged in camping, visiting historical sites, boating/skiing/swimming, and fishing. For those interviewed in areas near interstates, access was of greater relative importance in the above four types of recreation plus those engaged in picnicking-sightseeing. The recreation type giving greatest relative importance to access was camping. Apparently, the bulkiness of camping equipment made access more important.

Exhibit 5 provides a profile of the trip characteristics of those visiting sites near to and far from interstates. Approximately 38 percent of those surveyed were visitors in areas near interstates while 62 percent visited areas far from interstates. These percentages may be used as benchmarks in the evaluation of the percentages in each observation of a trip characteristic. The most significant departures from the benchmark proportions are listed below.

A greater relative proportion of the visitors with the following trip characteristics chose areas near interstates: where origin of trip was other-state, where destination was either border-state or other-state, where duration of trip was either no nights or 16 or more nights, where mode of transportation was auto-no equipment, where number of persons on trip was one, where round-trip distance was 2,000 miles or more, where there was no lodging, and where time of visit was weekend.

In contrast, a greater relative proportion of the visitors with the following trip characteristics chose areas far from interstates: where origin of trip was border-state, where round-trip distance traveled was over 200 but under 2,000 miles, and where time of visit was weekend. The least likely to be visiting areas far from interstates were those whose destinations were other states, while the least likely to visit areas near interstates tended to be those traveling 200-399 miles and where time of visit was weekend.

Exhibit 6 provides a look at the comparative demographic characteristics of those near and far from interstates. The same benchmarks can be used for evaluation as were used for analyzing trip characteristics. A greater relative proportion of the visitors with the following demographic characteristics chose areas near interstates: where age was 45-54, where visitor was female, and where occupation was self-employed. In comparison, a greater relative proportion of the visitors with the following demographic characteristics chose areas far from interstates: where age was under 18 or 55-64, where visitor was male, where occupation was farming, and where income was under $5,000.

SUMMARY

In conclusion, while there was no majority among the recreationalists, slightly more visitors in remote than in near areas expressed a desire for additional interstates. It was also found that, as one would expect, access was of greater relative importance to visitors in the areas near to interstates. The area itself was found to be of great importance to majorities of those in both areas. The above are really just a matter of relative degree. Perhaps the most meaningful conclusion is the clear indication that outdoor recreationists, regardless of whether in areas near or far from interstates, do not strongly prefer that interstate-freeway type highways be built close to recreation sites. However, it is important to the outdoor recreationist that good all weather (secondary) roads leading to the area be available. This means that the planning for location of interstate-freeway type highways should include avoidance of location directly in outdoor recreation areas. Their close location is simply not a top priority matter to outdoor recreationists and would actually be a negative factor for many types of outdoor recreation.

Exhibit 5

COMPARISON OF TRIP CHARACTERISTICS BETWEEN VISITORS TO AREAS NEAR AND FAR FROM EXISTING INTERSTATES

Trip Characteristics	Predominant Observations		Proportion Indicating	
			Near (%)	Far (%)
Origin of Trip	In-state	(55.9%)*	41.0	59.0
	Border-state	(26.8%)	24.8	75.2
	Other-state	(17.3%)	46.7	53.3
Destination of Trip	In-state	(91.0%)	35.2	64.8
	Border-state	(4.1%)	54.1	45.9
	Other-state	(5.0%)	66.7	33.3
Purpose of Trip	Outdoor Rec.	(74.5%)	35.7	64.3
Duration of Trip	No Nights	(17.5%)	51.2	48.8
	1 - 2 Nights	(23.8%)	31.3	68.7
	3 - 5 Nights	(26.0%)	32.7	67.3
	6 - 15 Nights	(24.8%)	35.5	64.5
	16 - more Nights	(7.9%)	52.6	47.4
Mode of Transportation	Auto-No Equip.	(25.2%)	45.3	54.7
	Auto-Equip.	(62.6%)	34.2	65.8
	Motor Home	(8.7%)	40.5	59.5
Number of Persons on Trip	1	(4.6%)	55.1	44.9
	2	(36.8%)	39.1	60.9
	3 - 5	(49.6%)	36.3	63.7
	6 - more	(9.0%)	32.5	67.5
Round Trip Distance	Up to 200 Miles	(45.9%)	45.5	54.5
	200 - 399 Miles	(14.9%)	21.3	78.7
	400 - 599 Miles	(10.3%)	25.0	75.0
	600 - 799 Miles	(5.1%)	29.9	70.1
	800 - 999 Miles	(5.0%)	34.9	65.1
	1,000 - 1,999 Miles	(10.9%)	27.7	72.3
	2,000 - over	(7.9%)	59.4	40.6
Primary Type of Lodging	None	(18.6%)	44.1	55.9
	Camping	(72.1%)	35.5	64.5
Previous Visitor	Yes	(66.1%)	35.2	64.8
	No	(33.9%)	42.9	57.1
Time of Visit	Weekend	(49.8%)	21.7	78.3
	Weekday	(50.2%)	53.4	46.6

*Percent of all surveyed having this specific trip characteristic observation.

Source: Survey conducted by the authors.

Exhibit 6

COMPARISON OF DEMOGRAPHIC CHARACTERISTICS BETWEEN VISITORS TO AREAS NEAR AND FAR FROM EXISTING INTERSTATES

Trip Characteristics	Predominant Observations		Proportion Indicating Near (%)	Proportion Indicating Far (%)
Household Head	Yes	(78.4%)*	37.3	62.7
	No	(21.6%)	39.4	60.6
Age	Under 18	(3.4%)	31.7	68.3
	18 - 24	(10.8%)	35.9	64.1
	25 - 34	(25.8%)	36.8	63.2
	35 - 44	(24.2%)	38.8	61.2
	45 - 54	(17.2%)	43.3	56.7
	55 - 64	(10.9%)	31.6	68.4
	65 and over	(7.7%)	39.9	60.1
Sec	Male	(74.4%)	36.5	63.5
	Female	(25.6%)	42.3	57.7
Race	White	(98.5%)	37.1	62.9
Education	Grade School	(4.6%)	37.0	63.0
	High School	(49.9%)	36.3	63.7
	Post HS-College	(45.4%)	39.7	60.3
Occupation	Prof-Tec	(33.8%)	38.2	61.8
	Farm	(9.4%)	30.9	69.1
	Craft	(18.5%)	39.4	60.6
	Self-Emp.	(10.2%)	42.9	57.1
	Retired	(13.5%)	38.0	62.0
Income	Under $5,000	(3.9%)	34.4	65.6
	$5,000 - $7,499	(6.8%)	38.7	61.3
	$7,500 - $9,999	(12.5%)	37.8	62.2
	$10,000 - $14,999	(25.2%)	38.7	61.3
	$15,000 - $19,999	(23.0%)	37.3	62.7
	$20,000 - $29,999	(19.0%)	40.0	60.0
	$30,000 - over	(9.6%)	39.6	60.4

*Percent of all surveyed having this specific trip characteristic observation.

Source: Survey conducted by the authors.

TAXATION AND INSTABILITY IN AFRICAN GOVERNMENTS

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INTRODUCTION

The world has a basic economic interest in the political stability of African countries. These countries produce many raw products much in use throughout the world. They pruchase food, tools, and technology from trading partners and are high on the list of world tourist attractions.

Political instability influences economic activity making it necessary to understand factors which affect the security of these countries. Of the thirty-four countries of Black Africa listed in Table I only four, since 1955, have not experienced some sort of internal political stress which resulted either in a coup, an attempted coup, a rebellion, or a civil war. From the accompanying table it can be seen that some of the countries have been unstable since their very beginnings.

THEORIES OF GOVERNMENTAL INSTABILITY

Several theories have been advanced to account for this instability. These are reviewed briefly:

Relative Deprivation or Misery: Under this concept, individuals suffer stress through land alienation, uprooting, hunger, and poverty due to large scale structural change. Governments in apartheid Africa are unstable because of these conditions and must resort to armed force to maintain order.[1]

Colonialism: Closely related to the deprivation thesis is the idea that colonialism itself provided the impetus for political instability, since such regimes were repressive.[2]

Political Process Models: When power cannot be gained legally and arbitrary force retards the constitutional distribution of power among contending groups, instability is most likely to become a reality. African countries share similar problems and when there is a change in one country it tends to affect others. Violence in one country may spread to neighboring countries.[3]

Political Corruption: Some instability is explained by the tendencies of leaders to take bribes, appoint relatives, live lavishly, and ignore their countries' constitutions while the general constituencies subsist at levels of poverty and below.[4]

Tribalism: The large ethnic-linguistic groups, called tribes, are the major political organizations in Black African countries. Conflicts with traditional enemies makes stability through cooperation tenuous at best.[5]

A THEORETICAL SUPPLEMENT

Although each of these explanations has a degree of merit, none alone can explain African governmental instability. Even when taken together, an important factor is omitted which, if included, would add power to any analysis.

TABLE 1. SUMMARY OF POLITICAL ACTIVITY OF AFRICAN COUNTRIES BY YEAR

COUNTRY	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
ANGOLA																						I			
BOTSWANA											I														
BURUNDI							I				X										X				
CAMEROON					I																				
CENTRAL AFRICAN REPUBLIC					I						X			O							O			O	
CHAD					I					O			O			O				X				O	
CONGO (BRAZZAVILLE)					I			X					X		O									X	
CONGO (ZAIRE)					IX			O		X															
DAHOMEY					I			O		X		X		O											
ETHIOPIA (PB)	*Civil war from 1955*				O	*to present*																		O	
GABON					I																				
GAMBIA										I															
GHANA		I									X	O					X							X	
GUINEA			I																						
IVORY COAST					I									CW											
KENYA						R ►	S ►	I ►		►	►		►												
LESOTHO											I				X										
LIBERIA (I-1847)																								O	
MALAWI									IR				R												
MALI					I								X											O	
MAURITANIA					I						EV ►	►													
MOZAMBIQUE																				I				CW	
NIGER					IR				R ►	►															
NIGERIA					I						X	S ►		►	►										
RWANDA							I	CW ►	►		CW								CW						
SENEGAL					I		O																		
SIERRA LEONE						I						X	X		R	O									
SOMALI					I			R						X										O	
SUDAN	I		X	O			CW	R			O			O		O	*to present*								
TANZANIA						I			M																
TOGO					I			X			O	X											O		
UGANDA							IR	R			XR					X								OX	
UPPER VOLTA					I						X														
ZAMBIA									I																

SOURCE: D Morrison, R C Mitchell, J N Paden, and H M Stevenson, Black Africa: A Comparitive Handbook. New York: Free Press, 1972 Supplemental entries from news accounts.

LEGEND:			
I=Independence year	CW=Civil war	S=Secession	R=Revolt
M=Mutiny	O=Attempted coup	EV=Ethnic violence	X=Coup
PB=Pre-Biblical	► ► ► = Activity continued to year indicated		

The hypothesis of this paper is that African governmental instability is located in the social expectations of segments of the population who wish to experience the fruits of independence, perceived by them as wealth, recognition, and power. Roughly these expectations translate into the concept of achieving access to that luxury and status commonly associated with the colonialists of former days. As people demand such benefits which cannot then be supplied out of governmental revenues, they blame officials for the failure to provide them.

AFRICANS AND TAXES

As a group, Africans have not experienced the relationship between taxation and the delivery of services accruing to citizens. During colonialism there was vast unemployment of the local populations. In that sense, they were not significant participants in the money economy. Under indirect rule,[6] few Europeans were located in African colonies and local people held relatively important jobs in small numbers. Local people in governmental service or the more important private sectors paid little in taxes. Many Africans were taxed in the form very low wages and received very few services.

Prior to independence some colonial governments levied hut and head taxes to help defray the cost of government.[7] These taxes yielded little revenue as village huts and houses were not seen as permanent economic property. Much land was not individually owned and huts could be destroyed with little loss, except time to an owner.

Head taxes lost most of their meaning in the countryside where most of the children were born. Births were not often registered. Families may not have addresses. Numbers could easily be concealed thereby reducing the tax burden on each family.

Goods sold for export or those imported may be taxed. Business and professions must obtain licenses and pay fees in order to operate. Income taxes can be collected only from persons with public jobs or positions with firms which keep accessible records.

A government may raise money through borrowing. However, in order to take advantage of low repayment plans, long term debts may render a country vulnerable to control by foreign money lenders, resulting in a form of neocolonialism.

No form of taxation, such as a sales tax, applies to all persons in any African country. Generally, citizens no longer pay tribute (taxes) to kings or chiefs in the form of produce for support of the royal compound or labor for upkeep of public roads or other installations. Many groups, such as the Sudanic peoples, do not have much political organization and do not handle much money. Cattle is their major form of wealth and they do not understand taxation. Their social organization does not require services such as schools, police forces, road upkeep, hospitals, etc. Individuals barter skins and ivory for blankets, knives, spear points and other manufactured goods.

Groups fighting over scarce resources, such as grazing space and water holes, sometimes necessitate the use of troops to maintain order. If taxes, either in cash or kind, are imposed upon the area, villagers must raise the money. Young men often emigrate to the cities to obtain work in order to earn tax money to stabilize the households of relatives living in the countryside.[8]

Economic growth of the colony was not one of the major concerns of colonial government. Some Africans did receive better jobs than was possible under traditional forms of government for they were at least in the money economy. For practical purposes, Africans not engaged in the money economy paid few taxes and received almost no services.

STABILITY UNDER TRADITIONAL GOVERNMENT

Traditional African governments, whether at the level of the village or above, seem to have been more stable than those constituted after independence. Such data as exist suggest that power struggles for succession to a throne went on usually when that throne fell vacant because of the death of a king. Under traditional monarchies, brothers, whose kinship resulted through polygynous royal marriages, often engaged in internecine fights for the crown. However, once a successor was chosen, those who had lost the contest usually retired and seldom tried to overthrow the regime to establish themselves in power.[9]

That pattern gave way when European style political systems were introduced. European rule did not require that Africans exercise the franchise as a public right. Disputes were settled by representatives of European commissioners or colonial governors. Chiefs were often co-opted into the European system and adopted colonialistic expectations.

TAXATION AND INSTABILITY UNDER NEW GOVERNMENTS

The departure of the Europeans left government directly in the hands of Africans, beginning in 1956 when the Sudan received its independence. Afterwards, in rapid succession, the former colonies became countries with indigenous governments. In some instances, the instability of these new governments became clear soon after independence, for example as in the Congo.

When Africans assumed control of their countries, they promised to provide services to the people who, in general, were not accustomed to paying taxes. Regularly employed persons were taxed heavily and could not meet traditional obligations because of shortages of funds. Village people demanded services from African administrations which may not have even been asked for under colonialism. As more services were demanded while jobs were unavailable, governments had to assume control of most productive economic sectors in order to reduce the need to borrow money from overseas lenders. Under such conditions, unemployed young people were forced to work on farms just to feed themselves.

The concept of taxation was not taught to the majority of Africans during the pre-independence period. Colonial governments did not deliver many services to villagers. Few understood that money was not available because large numbers of people were not working and therefore were not taxed.

Government has not been seen in most of Africa as a provider of services to the people. Rather it has been viewed as a source of personal power: a symbol of authority whereby the onerous responsibilities of citizenship might be evaded. Many governments are built upon ethnic lines and a group out of power may feel that it might enhance its power by controlling the government. Coups and rebellions become likely as long as there are groups who believe the only avenue to power, status, and authority is through seizure of the government.

CONCLUSIONS

A higher standard of living for all would ease the surge toward governmental instability, but the social overhead capital required for the higher standard will have to be paid for out of general revenues. These are provided mainly through taxation of the constituency. But, taxation is not a viable possibility for providing the needed revenues. Thus, the circle is closed and poverty continues to prevail.

FOOTNOTES

[1] See Bernard A. Nkemdirim, "Reflections on Political Conflict: Rebellion and Revolution in Africa," *J. Modern African Studies,* 15, 1, 1977, pp. 75-90.

[2] Amilcar Cabral, Practical Problems and Tactics," in *Revolution in Guinea: Selected Text.* New York edition, 1969.

[3] Nkemdirim, op. cit.

[4] Bernard A. Nkemdirim and Victor T. LeVine, *Political Corruption: The Ghana Case.* Stanford: Hoover Institution Press, 1975.

[5] Good discussions of the nature of tribalism may be found in P.C. Lloyd, *Africa in Social Change.* Baltimore: Penguin Books, 1967, pp. 288-290 and in Robert I. Rotberg, "Tribalism and Politics in Zambia," *Africa Report,* December 1967, pp. 29-35

[6] The small number of Europeans in Africa during the colonial period meant indigenous structures had to be relied upon to represent the European powers.

[7] See Derrick J. Stenning, *Savannah Nomads.* London: Oxford University Press for International African Institute, 1959, for an extensive treatment of the lives and social organization of herding peoples.

[8] Some idea of how political power was transferred in traditional kingdoms is found at many places in M.S.M. Semakula Kiwanuka, *A History of Buganda: From the Foundation of the Kingdom to 1900.* New York: Africana Publishing Corporation, 1972.

[9] The validity of this assumption may be partially evaluated by considering evidence from modern Uganda. In a thriving center of some 20,000 persons, sample data showed that taxes were paid, averaging $7 per month, by only that income group averaging $251 per month. Higher income groups, those making $272-300 per month, paid no taxes. No low income persons, those earning from $32 to $48 per month, paid taxes. See David Jacobson, *Itinerant Townsmen: Friendship and Social Order in Urban Uganda.* Menlo Park, California: Cummings Publishing Company, 1973, pp. 46-47. Other relevant literature on this issue may be Aidan Southall, "General Amin and the Coup: Great Man or Historical Inevitability," *J. Modern African Studies,* 13, 1, 1975, pp. 85-105. David Laitin, "The Political Economy of Military Rule in Somalia," *J. Modern African Studies,* 14, 3, 1976, pp. 449-468, and Valerie Plave Bennett, "Military Government in Mali," *J. Modern African Studies,* 13, 2, 1975, pp. 249-266.

SYSTEM SCIENCE: A PERENNIAL ORDER FOR MARKETING

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INTRODUCTION

The commodity, institutional, functional, managerial, and environmental points of view over the past three quarters of a century are among numerous approaches to the study of marketing that have been advanced. The practical decision-making attributes associated with the managerial focus have made it the most effective approach for advancing marketing knowledge on a sound empirical basis. The efficacy of the managerial approach has been enhanced in recent years by its inclusion of operations research (OR), a systems science discipline which has been applied to business in the post-WWII period. Because of the complexity associated with the theory, concepts, and techniques of operations research, disciplinarians have tended to specialize in the use of three sets of systems science procedures endogenous to OR's original format. These distinct procedural areas are the systems approach, information systems, and models. Ironically, marketers have paid little attention to General Systems Theory (GST) which is frequently referred to as the fulcrum of science and represents the fourth area in the systems science taxonomy (see Figure 1). GST provides the primary component for reducing system science procedures into a universal methodology for developing, organizing, and integrating marketing knowledge into a coherent whole.

ANALYSIS OF APPLICABILITY

The functional interrelationships exemplified in the systems science taxonomy are made operational by synthesizing the steps associated with the scientific method, marketing research, and model building into a continuous decision-making/problem-solving process. This sequence of systems science steps is: (1) recognition of the problem; (2) assessment of relevant existing knowledge; (3) definition of the real problem; (4) concept formation and specification of hypothesis; (5) collection of pertinent data; (6) organization of data in meaningful ways; (7) analysis of the information; (8) construction of model, i.e., design, analyze and control model so it represents the real system under study; (9) test of model–use sample problems to make sure that it represents the system correctly; (10) continuous evaluation of model under changing conditions; (11) modification and revision of model or restatement or development of new hypothesis; and (12) integration of new knowledge into marketing discipline.

The systems science approach to marketing, illustrated in Figure 1, begins with the use of GST for concept and hypothesis formulation. The epistemological properties of GST draw on the roots of knowledge through the use of a holistic premise which maintains that social phenomena are extensions of and are isomorphic with organic and physical phenomena.[1] GST is suited to the interdisciplinary nature of marketing because it is concerned with developing a systematic and theoretical framework for describing the general relationships of the empirical world. The aim of GST is to point out similarities in the theoretical constructs of different disciplines, and, where these exist, to develop theoretical models having applicability to at least two separate fields of study. Through GST it is possible to strip away the allegory surrounding

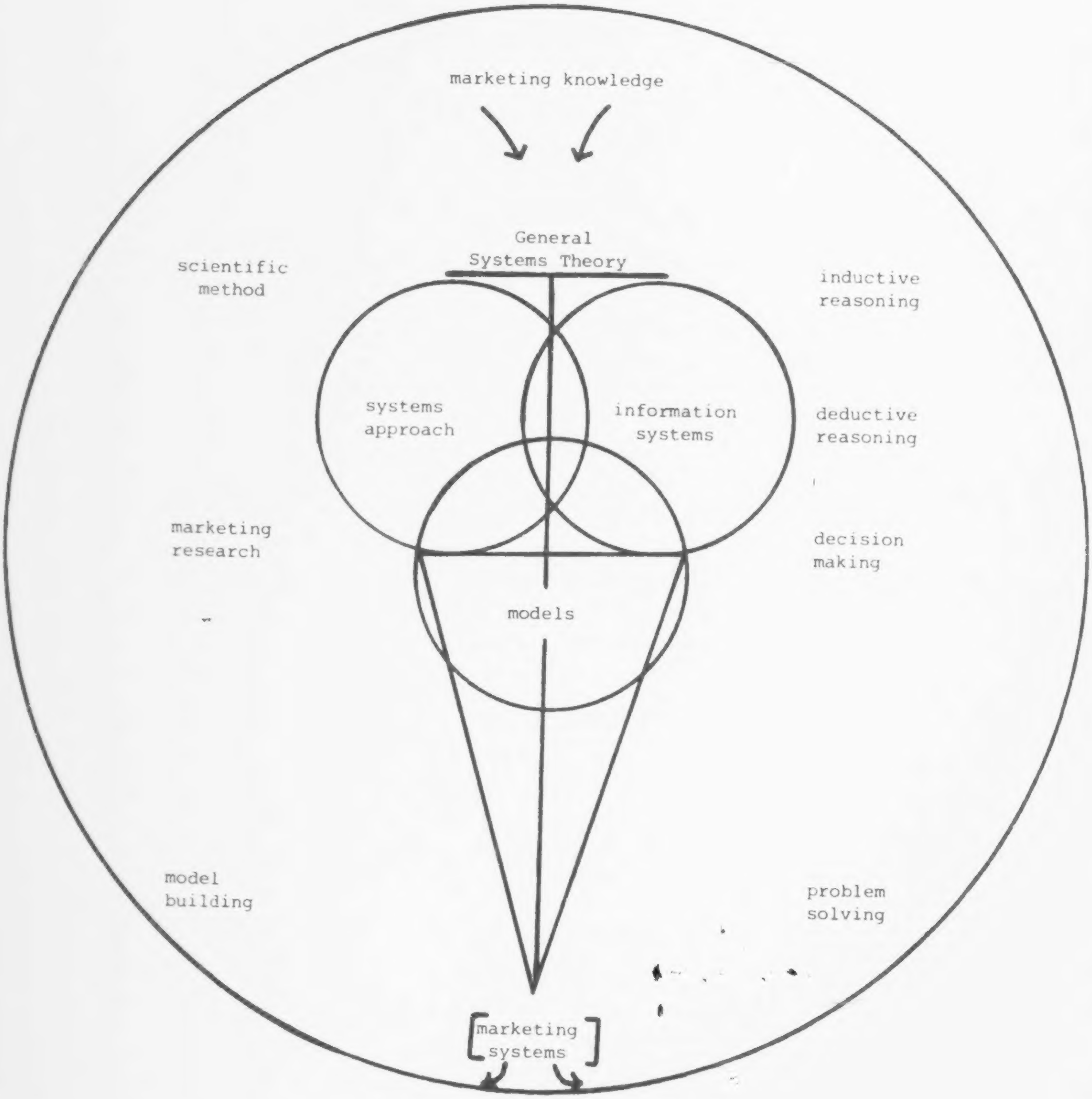
marketing knowledge
General Systems Theory
scientific method
inductive reasoning
systems approach
information systems
deductive reasoning
marketing research
decision making
models
model building
problem solving
marketing systems

Figure 1. Taxonomy of the Systems Science Approach to Marketing

diverse phenomena in different disciplines and expose the functional similarities which parallel their respective operations. If an equivalence relation–analogy, logical homology, isomorphism–exists between these diverse phenomena, the known principles of operation concerning the process in the more advanced discipline can be used in developing a model depicting how the system should function in the less advanced field.[2] Cybernetics–the study of communication and control systems in the animate and inanimate worlds–attests to the fruitfulness of using GST procedures to advance the knowledge of how information systems should operate in social disciplines.[3]

PROBLEM SOLUTION

As disciplinarians recognize a problem, it is appropriate for them to assess all relevant knowledge–secondary research–concerning the observed discrepancy in an effort to precisely define the problem to be resolved. Once a definition of the problem has been obtained, the procedures associated with GST can be used in a search in advanced disciplines for phenomena which are similarly operative in the dysfunctioning system under study. This formal identity, along with its representative principles of operation, can be used to formulate a relevant concept and hypothesis through inductive reasoning. This conceptualization will ultimately be reduced to a model of the real life system through deductive reasoning. Since a system can be defined as "a regularly interacting or interdependent group of items forming a unified whole," just about anything is a system and should be modelled if it proves problematic.[4] Although the use of analysis in model building may appear to be a pointless exercise, it should be observed that formal identities are the basis of all inductions which underlie scientific laws.[5] Two examples of formal identities in marketing are the product life cycle and demographic energy.[6]

To prove or disprove any hypothesis, the systems approach can be used in a comprehensive and expedient manner to abstract timely, relevant, accurate (primary research) data about the process under study. The systems approach represents an orderly way of thinking which arranges everything known to man in a hierarchy of order based upon a common unit of behavior. Through the systems approach, complex phenomenon can be broken down into simpler components, so that their inputs, throughput processing, outputs, and cause and effect relationships can be carefully evaluated. Once sufficient data has been collected concerning the relevant system, the information system organizes the data in meaningful ways and gives it direction. Next, the decisional models which may be explicit or subjective, analytical or creative in nature can be used to reduce the information down into high levels of intelligence. This functional information can be used for design, analysis, and control purposes in constructing an iconic, analogue, or symbolic model of the real life marketing system under study.

That model, which is essentially a theory, can be tested under actual conditions in determining the validity of the original concept and hypothesis. Since all knowledge is tentative, this model, assuming it is valid, should be tested continuously as conditions change. If only small adjustments are required in maintaining the model's reliability for prediction, control, or explanation of some phenomena, it would suggest that a generic structure or process has been uncovered.

SUMMARY[7]

The systems science approach provides a universal methodology for integrating knowledge from various disciplines into a common body of marketing knowledge. By periodically recycling all pertinent knowledge through this holistic framework, the systematized body of marketing knowledge will one day represent a complete array of essential principles or facts, arranged in a rational dependence or connection. Thus the marketing approach will, in fact, make possible the use of the entire complex of ideas, principles, and laws as a coherent whole.

FOOTNOTES

[1] Adapted from George T. Lockland, *Grow or Die: The Unifying Principle of Transformation* (New York: Random House, 1973), p. 8.

[2] Mihaylo D. Mesarovic, "Foundations for a General Systems Theory," in *Views on General Systems Theory*, Mihaylo D. Mesarovic (ed.), (New York: John Wiley & Sons, 1964), p. 2.

[3] Stafford Beer, *Decision and Control* (New York: John Wiley & Sons, 1966), p. 239.

[4] William R. King, "Systems Analysis at the Public-Private Marketing Frontier," *Journal of Marketing 33* (January 1969): 84.

[5] James G. Miller, "Toward a General Theory for the Behavioral Sciences," *The American Psychologist*, Vol. 10, No. 9 (September 1955): 519.

[6] George Schwartz, *Development of Marketing Theory* (Cincinnati: South-Western Publishing Co., 1963), p. 42.

[7] The author is indebted to Eileen Long, Linda Warren and Jim Stearns, instructors at Florida State University, who critiqued an earlier draft of this article.

THE UPCOMING CENSUS: PROSPECTS AND PROBLEMS

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The 1980 census, which begins April 1, will mark the 20th time in the Nation's history that Americans have counted themselves. The number of questions and the uses of census data have both grown considerably since the first count; and while quill pens have yielded to computers, the census has never lost its roots in the Constitution.

When the delegates to the Constitutional Convention met in 1787, they decided that population distribution should be the basis for direct taxation and for appointment in the House of Representatives, so they approved a Constitutional requirement that every person in the Nation be counted at least once every ten years, beginning in 1790. For nearly two centuries since then, the decennial census has reported the growth and development of the Nation, yielding information about ourselves as a people: who we are, what we do, how we live. Taken together, these ten-year assessments of the developing republic form the backbone of our history.

EXPECTED DEMOGRAPHIC TRENDS

The upcoming 1980 census is expected to reveal dramatic changes in American family life, income, housing costs, population distribution, and Congressional representation along with one of the lowest population growth rates in our history. The census will document the changes indicated in recent years by ongoing Census Bureau surveys and will spell out in great detail the changes in U.S. society during the past decade.

The American family is one example. The 1980 census is expected to show that:

* The number of husbandless women who head families has soared nearly 50% since 1970 to more than eight million.

* The traditional family household of mother, father, and one or more children now accounts for less than a third of the Nation's households–the lowest percentage ever.

* The number of unmarried couples sharing a household has more than doubled in 10 years.

As for population distribution, the 1980 census is expected to define sizable population shifts from Northern states to the Southern and Western areas. The 1980 census data will measure population shifts by age, race, ethnic origin, and in other ways. For example, annual surveys by the Census Bureau since 1973 have found that Blacks moving to the South outnumber those leaving, reversing a trend of more than 100 years. The census will determine whether the Blacks moving into the South are newcomers or are returning to the South where they are settling, and what job skills they bring–detailed information that surveys, by their nature, do not provide.

Income data will be of interest to economists and others. Discounting inflation, there was a 34 percent increase in median family income between 1960 and 1970, but the increase from 1970 to 1978 was only four percent.

The big drop can be attributed to economic sluggishness, to the increase in the number of families maintained by single parents who tend to have a lower average income, and to changing age structure and family composition. Compared to the 1960s, a higher percentage of people are now in their early, rather than mature, earning years.

The census will also provide data on poverty, useful for allocating Federal funds. Surveys have shown little change in the nationwide number of poor during the 1970s but there have been changes in their composition and geographic distribution. The census is expected to show a continuing increase in the proportion of poor persons living in families maintained by women and a decline in the proportion of the poor residing in the South.

The economic impact of the "baby boom" after World War II will continue to be tracked by the census. They have grown to be young adults, ages 18 to 34, and are now in the job market, establishing families, buying homes, and exerting new pressures on the economy because of their number.

Housing is a major aspect of the 1980 census. Government and private industry have a wide demand for the information that will be collected about housing in use, vacant dwellings, and units such as mobile homes. It is expected that the total number of housing units will have increased more than 20 percent since 1970, twice the rate of population growth. Housing costs will also be of concern. A 1976 Bureau survey found, for example, that the average owner of a mortgaged home at that time was paying 18 percent of annual income for the mortgage, real estate taxes, property insurance, utilities, fuel, and trash collection. How the 18 percent figure holds up in 1980, in light of factors such as a 45 percent jump in the average price of a new one-family home over the past four years, will be of wide interest.

A very significant alteration in the Nation's growth pattern will be highlighted by the slowdown of the population's rate of increase since 1970. A growth of only nine percent is projected. If the census bears this out, it will be the smallest increase in any census, with one exception, since the first census in 1790. That exception was the 1940 census which found the lowest 10-year growth rate as a result of the Great Depression.

The census is the Constitutional basis for reapportioning seats in the House of Representatives, and recent population estimates by the Census Brueau suggest that extensive redrawing of district boundaries will be necessary after the 1980 census. California, Texas, Florida, Utah, Oregon, Tennessee, Washington, and Arizona may gain one or more seats, and New York, Ohio, Illinois, Pennsylvania, Michigan, and South Dakota may lose seats.

MECHANICS OF THE CENSUS

For most Americans, the 1980 census will be simple enough. A questionnaire will arrive in the mail on March 28. The recipient will simply answer the questions and then either mail back the form on April 1 or hold it for a census taker to pick up depending on the instructions.

By the time the last American is counted sometime during the summer, the Bureau of the Census will have reached an estimated 222 million U.S. residents and 86 million housing units, and gathered more than three billion answers. The 222 million residents include some people who do not speak English, people with various political opinions, the rich and the destitute, the educated and the illiterate, and members of all the earth's races. The census must also assess their housing--single family homes, houseboats, condominiums, shacks, "abandoned" buildings, migrant worker camps, jails, school dormitories, at sea, and overseas.

In 90 percent of the Nation's households, people will be asked to take their own census, in effect, by answering the questionnaires and mailing them back in postage free envelopes. Census takers will obtain the information from households that fail to mail back completed questionnaires as requested. It is estimated that for every one percent of the population that mails back the completed questionnaire, $2 million in follow-up cost will be saved. The remaining 10 percent, mostly in sparsely settled areas in the Western half of the Nation, will receive instructions to hold the completed questionnaires until census takers pick them up. In some cases, the census takers will ask additional questions.

Census questions seek basic information about people--age, sex, occupation, and the like--and about subjects such as housing, personal transportation, and energy use. Most people will be asked to answer a basic census questionnaire, which has 19 questions. About one of five households, chosen randomly, will be asked to answer a longer version with 46 additional questions.

The 1980 census tabulations will yield a comprehensive statistical picture of the Nation and of every state, county, and community. This data about social and economic characteristics will be used time and again though the Census Bureau merely provides the data, and never applies it.

Being counted is crucial to full political representation as well. Census figures, besides their role in reapportioning the House of Representatives, are also used by most states to redistrict their legislatures and to adjust boundaries in municipal election areas.

American business firms, from local stores to multinational corporations, rely on census statistics when selecting new sites, evaluating product lines, and for other purposes that ultimately affect the state of the Nation's economy.

As the importance of census information has increased, so has pressure to assure that every U. S. resident is counted. An effort will be made by the Census Bureau to obtain the fullest possible count, especially in areas with significant minority populations. For several years, advisory committees composed of Black, Hispanic, and Asian-American leaders have worked with the Census Bureau to devise ways for improving the count of minorities. Similar meetings have been held with Native American leaders. A number of innovative methods will be used during the 1980 census to obtain the best possible count, such as double-checking households reported vacant and placing census takers in all night movies, taverns, and on street corners in major urban areas to find the uncounted.

By law, the Bureau must provide the President with the population totals for all the states by January 1, 1981, for purposes of Congressional reapportionment. A new law also requires that the population of counties, cities, and other political subdivisions be provided to each State no later than April 1, 1981, for redrawing district lines.

USES OF CENSUS DATA

The Constitutional purpose of the census, to provide a basis for reapportionment among the states of seats in the House of Representatives, has been constant since 1790. In modern times, particularly since the advent of the computer three decades ago, other applications of census data have become increasingly diverse. Census information is used daily everywhere in the United States.

Real estate firms use census data to give interested home buyers an instant mini-profile of prospective neighborhoods. In large cities, transportation planners rely on census information when selecting bus routes, subway stops, and highways that will need widening. Fast food chains consult census statistics when choosing the best site for a new restaurant.

During the past 10 years, government at every level has dramatically multiplied its dependence on census data to help plan and implement programs. More than 100 Federal programs now guide their spending of an estimated $50 billion annually with census statistics. Funding for the Cooperative Extension Service, for example, hinges upon a State's rural and farm population as determined by the census. Spending for the Headstart program depends upon the number of children in families below the poverty line. More jobs, help for abused children, crime prevention assistance, extra reading teachers, Federal highway funds–for these and many more Federal programs, where the money is to be spent will depend, at least partially, on what the 1980 census finds.

But census information does not cease being useful after the check is written. Local and state officials also rely heavily on census data when managing their programs. For instance, Federally funded nutritional and social service programs for the elderly bring senior citizens together at least five days a week to share hot, nutritious meals and companionship in local firehalls, church basements, and other meeting places. Congress has specified that each participating state should receive funds according to its over-60 population as determined by the census–the more senior citizens, the larger the check. Local officials must pick sites for the nutritional program. In cities, census data are consulted to pinpoint the local areas of the city with the largest numbers of senior citizens. The Mayor's Task Force on Aging uses this information to open nutrition centers for the elderly in each of the neighborhoods.

Every 1980 census question will provide important information for use in or out of government–always, as prescribed by law, anonymous statistics that can't be linked to individuals. Answers to the income questions on the census, for example, will directly influence a community's share in the General Revenue Sharing program. On a more local level, a firm recently used census data about the number of working mothers, median family income, and the ages of children to find areas in need of private day care centers.

Census data can be very helpful to community groups. The Boy Scouts have used census statistics to assist their projections of future enrollment and the types of facilities that would be needed. A church planned its building fund drive using census information about its attendance area. Block associations and others can make their case to city hall for a park or against a proposed highway with census statistics to back up their reasoning.

The Census Bureau will publish an estimated 300,000 pages of 1980 census statistics, which will be available also on microfilm, microfiche and computer tapes. The Bureau conducts a marketing program to inform the public about the existence of census statistics and how to acquire and use census products. It publishes a newsletter about its products and services, conducts training courses, prepares guides and other aids for users, and makes available the census data in various forms to public and private organizations–including the new State Data Centers. The Census Bureau also prepares college-level materials about how to use census products. More than 1,000 instructors have used these census products in their classes in such disciplines as sociology, business, and geography.

CENSUS FOCUS ON HOUSING

More than half the questions that will be asked in the 1980 census will focus on the Nation's 86 million housing units—their condition, their value, home energy usage, and other subjects of statistical importance for the planning and management decisions that confront government and the private enterprise system. To cite but a few applications that affect everyday life, census housing data is crucial to decisions about urban renewal, water and sewerage availability, new school openings or shutdowns, mortgage assistance programs, mass transportation, and the control of local residential growth.

Data from the 1980 census will identify the latest trends in home energy use and commuter transportation. Between 1950 and 1975, the number of U.S. households using coal and wood diminished to less than one percent for each fuel, but natural gas usage increased from 23 percent to 57 percent of all households. The home energy picture in 1980 may show wood and coal resurging in popularity. Residential solar energy use is still too limited to affect nationwide statistics in 1980.

Transportation planners will also learn from the census whether Americans are choosing to live and work in places with ready access to public transportation. Commuters will be asked their work location, time spent getting to work, means of transportation to work, and, for auto riders and drivers, how many people share the ride. Public transportation use by commuting heads of household actually declined between 1960 and 1975, from more than 12 percent to less than six percent. However, recent upswings in the use of public transportation will be documented by the census data. Close attention will be paid by energy planners to ownership and use of private passenger vehicles including trucks and vans of less than one-ton capacity. The number of U.S. households with two or more automobiles more than doubled between 1960 and 1975, and current estimates place the number of noncommercial trucks and vans at about 16 million.

Surveys conducted by the Census Bureau since 1970 indicate that the cost of keeping a roof over one's head will be higher than ever in 1980. From mid-1977 to mid-1978, the average sale price of a new home jumped from $54,200 to $62,500, more than 15 percent. In 1976, the average owner of a mortgaged home spent about 18 percent of his or her income for the mortgage, real estate taxes, property insurance, utilities, fuel, and trash collection; and renters spent an average of 24 percent for housing. Both figures are likely to be much higher in 1980.

CONFIDENTIALITY OF THE CENSUS

Federal law requires everyone to answer the census questions; it also protects the confidentiality of personal information. The only people who can see an individual's replies are census employees, who are sworn to secrecy under threat of a $5,000 fine and five-year prison term.

In the 50-year history of the modern census confidentiality law, neither the Bureau nor its employees have been formally charged with releasing census information about any individual. Landmark court rulings through this century have continually upheld the Bureau's refusal to release such information, even to the Secretary of State, the Attorney General, or to corporations involved in litigation. Moreover, the Bureau designs its procedures to avoid situations that could lead to a breach of the confidentiality law. Names, addresses, and telephone numbers are never allowed to enter any computer. Social security numbers are not requested by the census.

THE PROSPECTS

Even though there will probably be few surprises in the 1980 census, important changes will be documented. And, in conclusion, the census data will provide the grist for a decade of research efforts.

ARKANSAS ECONOMIC INDICATORS

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ARKANSAS ECONOMY: Q-III, 1979

Phillip H. Taylor
Director, Bureau of Business
and Economic Research
University of Arkansas

The economic indicators generally used to describe the Arkansas economic environment continued to appear mixed in the third quarter. The long expected recession did not occur but instead the economy continued to drift upward at a moderate pace.

In the third quarter, manufacturing wage and salary employment experienced its third consecutive quarterly decline. Total employment, however, rose to a level in excess of 922,000 with most of the growth coming in the nonmanufacturing wage and salary category.

Estimates of personal income for Arkansas in Quarter III indicated that it grew at an annual level of $15.3 billion, or by 6.5 percent as compared to a national growth of 2.8 percent. However, there were substantial downward revisions in previously released quarterly estimates for 1978 and the first half of 1979. For 1978, personal income in the State was approximately $13 billion, or 10.2 percent above 1977's figure. If no dramatic change takes place in the fourth quarter, personal income for 1979 should be in excess of $14.8 billion.

Value added by manufacture, seasonally adjusted, declined by 2.7 percent during the third quarter. This indicator has moved upward in only one of the last four quarters and now stands at a level below that of the same period in 1978.

After experiencing a 60.4 percent decline in the second quarter, net new savings grew slightly, 9.7 percent, in Quarter III. The accumulation of savings was well below the volume of new loans; moreover, it was less than the amount of net new savings reported in any quarter in 1978.

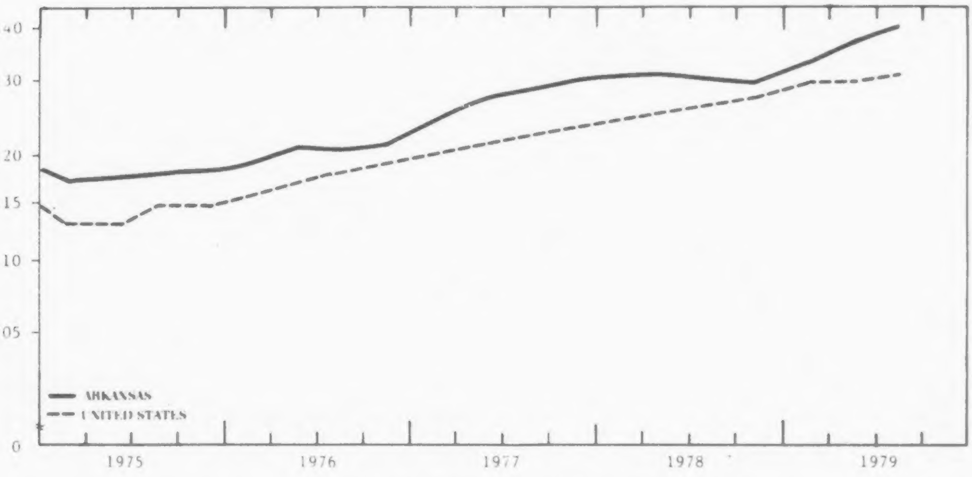
Residential construction displayed unexpected strength in Quarter III with the value of contracts, seasonally adjusted, increasing 25.6 percent. However, activity for the year will likely total less than in 1977. Nonresidential construction in the third quarter declined by 36.1 percent but it should be noted that activity in this sector was unusually high in Quarter II. By the end of September, the dollar value of nonresidential construction contracts had already exceeded that for the entire year of 1977 and is almost certain to be greater than the total for 1978.

Traffic on the Arkansas Waterway increased during the third quarter. While it remained below the level achieved at the same time in the previous year, the volume has advanced for two consecutive quarters.

While much of the evaluative data is not yet available, events during the closing months of 1979 appeared to be very similar to those of the reported third quarter. That is, the economy has moved upward while manufacturing employment has shown little growth and unemployment has risen. Through the end of the year consumers continued to spend but large amounts of the spending have been financed by increases in installment debt. The housing and new automobile markets have continued at relatively low levels but savings also have been low. With continuing increases in energy costs and with food prices at relatively high levels, consumer spending patterns have been altered. At the same time, the general inflation psychology has continued to push the consumer toward further increases in expenditures.

INDEX OF TOTAL EMPLOYMENT, ARKANSAS AND UNITED STATES

Quarterly data, seasonally adjusted, 1967 = 100



(Semi-logarithmic scale: equal slopes indicate equal rates of change)

Base Year to Date and Quarterly Changes in Total Employment

Seasonally adjusted, percent

	1967 to 1979 Q-III	1979 Q-III to 1978 Q-IV	1978 Q-IV to 1979 Q-I	1979 Q-I to 1979 Q-II	1979 Q-II to 1979 Q-III
Arkansas	+ 40.0	- 0.6	+ 2.4	+ 3.3	+ 1.5
United States	+ 30.7	+ 1.0	+ 1.0	+ 0.2	+ 0.8

EMPLOYMENT BY MAJOR INDUSTRY GROUP IN ARKANSAS, AND UNEMPLOYMENT RATE, ARKANSAS AND UNITED STATES

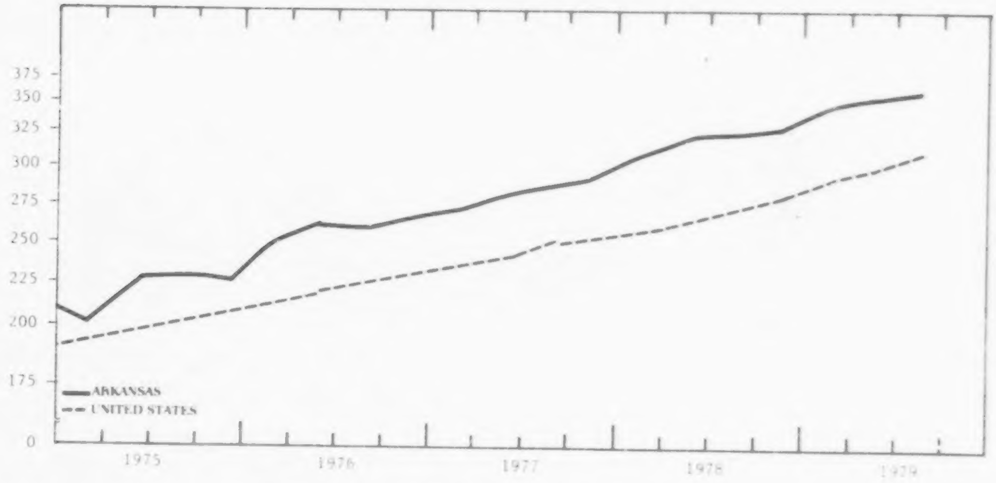
Seasonally adjusted

TIME PERIOD	EMPLOYMENT				UNEMPLOYMENT RATE	
	Wage and Salary		Agricultural	Total	Arkansas	United States
	Manufacturing	Nonmanufacturing				
1970	165,300	367,200	57,900	693,700	5.2	4.9
1971	166,500	372,000	58,900	702,400	5.5	6.0
1972	177,250	382,900	61,375	724,850	4.9	5.7
1973	197,200	417,500	59,000	783,700	4.2	4.8
1974	201,300	432,200	56,700	786,800	5.0	5.6
1975	175,500	444,500	61,000	776,700	8.9	8.5
1976	187,300	445,100	65,600	794,000	6.2	7.7
1977	208,900	483,400	62,800	837,700	6.0	7.0
1978	216,500	507,350	61,250	868,400	6.4	6.0
1979						
Q-I	217,750	517,150	64,450	880,450	7.2*	5.7
Q-II	216,550	522,300	66,500	909,100	5.3*	5.7
Q-III	212,500	530,300	68,200	922,700	6.0*	5.8

*Actual Rate. Effective January 1977 the Arkansas Employment Security Division revised its adjustments to employment data based on methods developed by the U.S. Bureau of Labor Statistics. As a result, the Arkansas unemployment rate cannot be seasonally adjusted at this time.

INDEX OF PERSONAL INCOME, ARKANSAS AND UNITED STATES

Quarterly data, seasonally adjusted 1967 = 100



Semi-logarithmic scale: equal slopes indicate equal rates of change.

Base Year to Date and Quarterly Changes in Personal Income

Seasonally adjusted, percent

	1967 to 1979 Q-III	1978 Q-III to 1978 Q-IV	1978 Q-IV to 1979 Q-I	1979 Q-I to 1979 Q-II	1979 Q-II to 1979 Q-III
Arkansas	+ 262.5	+ 2.7R	+ 5.6R	+ 0.3R	+ 6.5
United States	+ 209.1	+ 3.4	+ 3.7	+2.2	+ 2.8

PERSONAL INCOME IN ARKANSAS

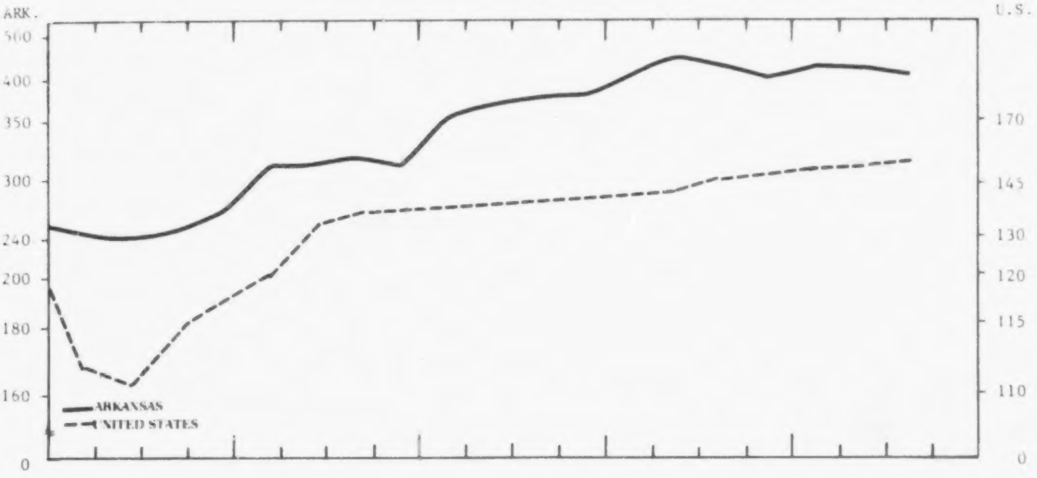
Millions of dollars, seasonally adjusted

Quarter	1970	1971	1972	1973	1974	1975	1976	1977	1978R	1979
Jan-Mar	1,288	1,446	1,585	1,789	2,142	2,070	2,508	2,837	3,118	3,596R
Apr-Jun	1,379	1,474	1,599	1,894	2,242	2,373	2,667	2,948	3,208	3,605R
Jul-Sep	1,415	1,528	1,662	1,978	2,213	2,391	2,626	2,984	3,315	3,838
Oct-Dec	1,435	1,557	1,794	2,020	2,234	2,368	2,676	3,070	3,406	
Annual	5,517	6,005	6,640	7,681	8,831	9,202	10,477	11,839	13,047	

R Revised based on updated state personal income data, Survey of Current Business, October 1979, p. 20

INDEX OF VALUE ADDED BY MANUFACTURE, ARKANSAS, AND INDEX OF MANUFACTURING PRODUCTION, UNITED STATES

Quarterly data, seasonally adjusted, 1967 = 100



(Semi-logarithmic scale: equal slopes indicate equal rates of change)

Base Year to Date and Quarterly Changes in Manufacturing

Seasonally adjusted, percent

	1967 to 1979 Q-III	1978 Q-III to 1978 Q-IV	1978 Q-IV to 1979 Q-I	1979 Q-I to 1979 Q-II	1979 Q-II to 1979 Q-III
Arkansas	+ 311.0	- 1.3	+ 4.3	- 0.5	- 2.7
United States	+ 52.2	+ 1.9	+ 1.3	+ 0.3	+ 0.3

VALUE ADDED BY MANUFACTURE

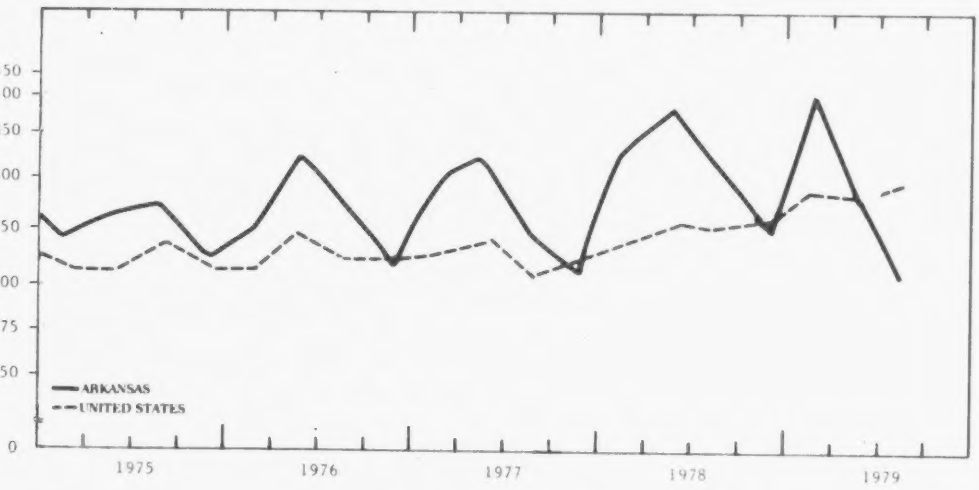
IN ARKANSAS

Millions of dollars

	Seasonally adjusted										Not seasonally adjusted
Quarter	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1979
Jan-Mar	521.7	578.9	728.7	825.9	959.6	899.5	1,158.2	1,362.9	1,598.4	1,666.0	1,516.0
Apr-Jun	532.5	581.8	724.9	858.4	975.8	895.1	1,161.4	1,443.1	1,659.2	1,656.2	1,623.1
Jul-Sep	536.1	609.5	704.0	819.3	963.0	925.7	1,194.4	1,451.8	1,619.3	1,611.1	1,740.0
Oct-Dec	552.3	644.5	724.7	856.9	924.0	985.2	1,160.8	1,468.6	1,597.3		
Annual	2,142.6	2,414.7	2,882.3	3,360.5	3,822.4	3,705.5	4,674.8	5,726.4	6,474.2		

INDEX OF CASH RECEIPTS FROM FARM MARKETINGS
ARKANSAS AND UNITED STATES

Quarterly data, seasonally adjusted 1967 = 100



(Semi-logarithmic scale: equal slopes indicate equal rates of change)

Base Year to Date and Quarterly Changes in Cash Receipts

Seasonally adjusted, percent

	1967 to 1979 Q-III	1978 Q-III to 1978 Q-IV	1978 Q-IV to 1979 Q-I	1979 Q-I to 1979 Q-II	1979 Q-II to 1979 Q-III
Arkansas	+ 114.1	- 16.6	+ 61.7^{R}	- 32.8^{R}	- 24.1
United States	+ 204.8	+ 8.9	+ 6.6	+ 4.1	- 0.3

CASH RECEIPTS FROM FARM MARKETINGS
IN ARKANSAS

Thousands of dollars

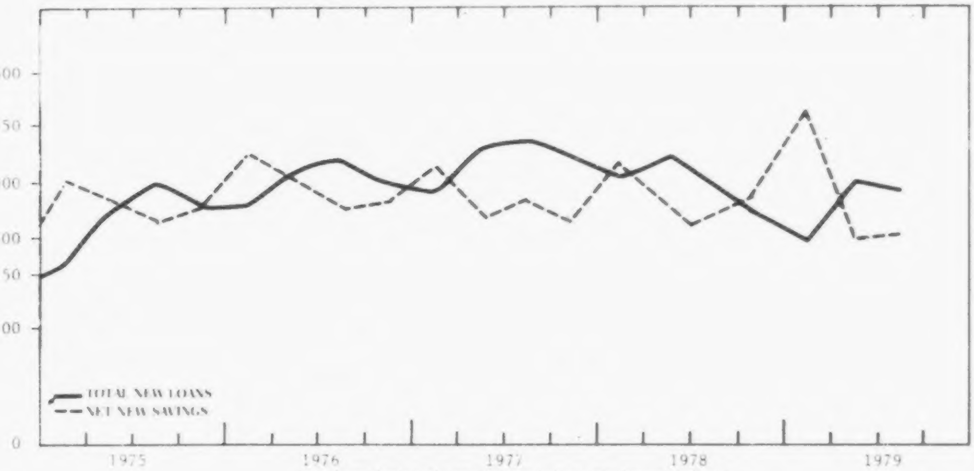
	Seasonally adjusted									Not seasonally adjusted
Quarter	1971	1972	1973	1974	1975	1976	1977	1978	1979	1979
Jan-Mar	262,963	314,037	385,687	718,418	529,492	565,575	686,105	790,387	972,681^{R}	653,609
Apr-Jun	313,908	323,552	488,760	705,678	584,346	740,954	703,457	899,118	653,344^{R}	463,866
Jul-Sep	272,248	323,286	554,500	568,678	609,324	621,624	578,357	721,275	496,092	358,879
Oct-Dec	308,094	369,370	580,100	618,796	508,651	497,214	500,169	601,443		
Annual	1,157,213	1,330,245	2,009,047	2,611,570	2,231,813	2,425.367	2,468,088	3,012,223		

[R] Revised to reflect updated seasonal index.

INDEXES OF ACTIVITY OF ARKANSAS SAVINGS AND LOAN ASSOCIATIONS

TOTAL NEW LOANS AND NET NEW SAVINGS

Quarterly data, not seasonally adjusted 1967 = 100



(Semi-logarithmic scale: equal slopes indicate equal rates of change)

Base Year to Date and Quarterly Changes in Activity of Arkansas S & L Associations

Not seasonally adjusted, percent

	1967 to 1979 Q-III	1978 Q-III to 1979 Q-IV	1978 Q-IV to 1979 Q-I	1979 Q-I to 1979 Q-II	1979 Q-II to 1979 Q-III
Total New Loans	+ 179.0	- 8.3	- 28.2	+ 50.8	- 7.5
Net New Savings	+ 103.7	+ 17.2	+ 60.4	- 60.4	+ 9.7

ECONOMIC ACTIVITY OF ARKANSAS SAVINGS AND LOAN ASSOCIATIONS

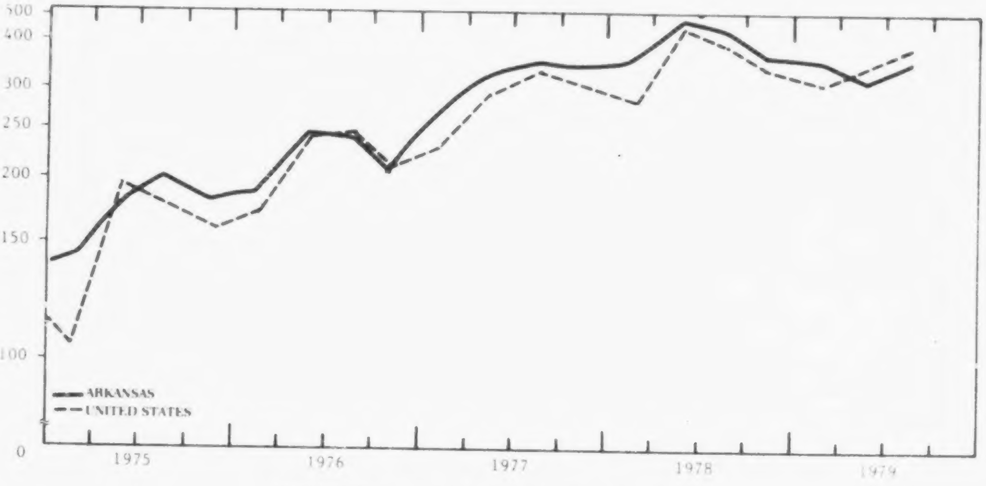
Thousands of dollars

TIME PERIOD	TOTAL NEW LOANS		NET NEW SAVINGS	
	Current $	1967 $	Current $	1967 $
1973	384,229	287,788	223,736	168,993
1974	300,152	203,915	188,400	128,872
1975	413,366	255,678	309,304	192,119
1976	606,400	355,280	393,300	231,050
1977	815,800	448,590	405,000	223,492
1978	729,300	373,700	416,900	213,610
1979				
Q-I	122,600	59,240	185,830	89,785
Q-II	191,200	89,300	76,200	35,590
Q-III	176,900	82,620	83,600	39,050

INDEX OF RESIDENTIAL CONSTRUCTION CONTRACTS

ARKANSAS AND UNITED STATES

(Quarterly data, not seasonally adjusted 1967 = 100)



(Semi-logarithmic scale: equal slopes indicate equal rates of change)

Base Year to Date and Quarterly Changes in Residential Construction

Not seasonally adjusted, percent

	1967 to 1979 Q-III	1978 Q-III to 1978 Q-IV	1978 Q-IV to 1979 Q-I	1979 Q-I to 1979 Q-II	1979 Q-II to 1979 Q-III
Arkansas	+ 278.4	- 13.8	- 10.6	- 4.8	+ 15.1
United States	+ 312.8	- 12.1	- 8.8	+ 33.5	- 4.7

RESIDENTIAL CONSTRUCTION CONTRACTS

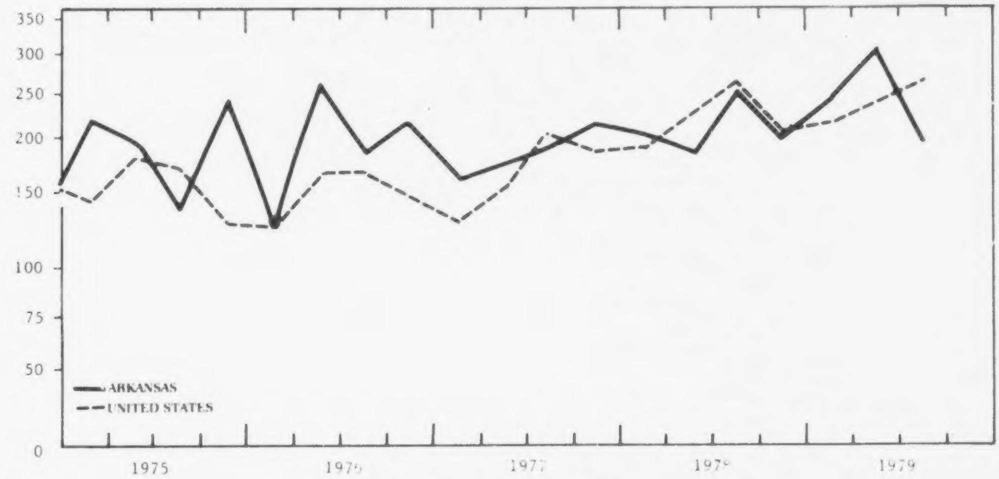
IN ARKANSAS

Thousands of dollars

	Seasonally adjusted									Not seasonally adjusted
Quarter	1971	1972	1973	1974	1975	1976	1977	1978	1979	1979
Jan-Mar	70,885	105,596	124,660	93,249	84,488	116,379	160,861	220,739	205,119	185,964
Apr-Jun	77,081	123,735	122,990	94,963	85,740	117,164	173,558	236,915	153,917	177,105
Jul-Sep	93,567	127,702	111,070	84,214	98,557	122,732	182,210	227,633	193,364	203,879
Oct-Dec	112,722	143,130	91,317	82,505	104,656	134,927	217,222	236,718		
Annual	354,925	500,163	450,037	354,931	373,441	491,202	733,851	922,005		

INDEX OF NONRESIDENTIAL CONSTRUCTION CONTRACTS
ARKANSAS AND UNITED STATES

Quarterly data, not seasonally adjusted 1967 = 100



(Semi-logarithmic scale: equal slopes indicate equal rates of change)

Base Year to Date and Quarterly Changes in Nonresidential Construction Contracts

Not seasonally adjusted, percent

	1967 to 1979 Q-III	1978 Q-III to 1978 Q-IV	1978 Q-IV to 1979 Q-I	1979 Q-I to 1979 Q-II	1979 Q-II to 1979 Q-III
Arkansas	+ 95.2	- 23.7	+ 28.9	+ 23.6	- 36.1
United States	+ 164.4	- 17.5	+ 7.6	+ 19.7	- 2.7

NONRESIDENTAL CONSTRUCTION CONTRACTS
IN ARKANSAS

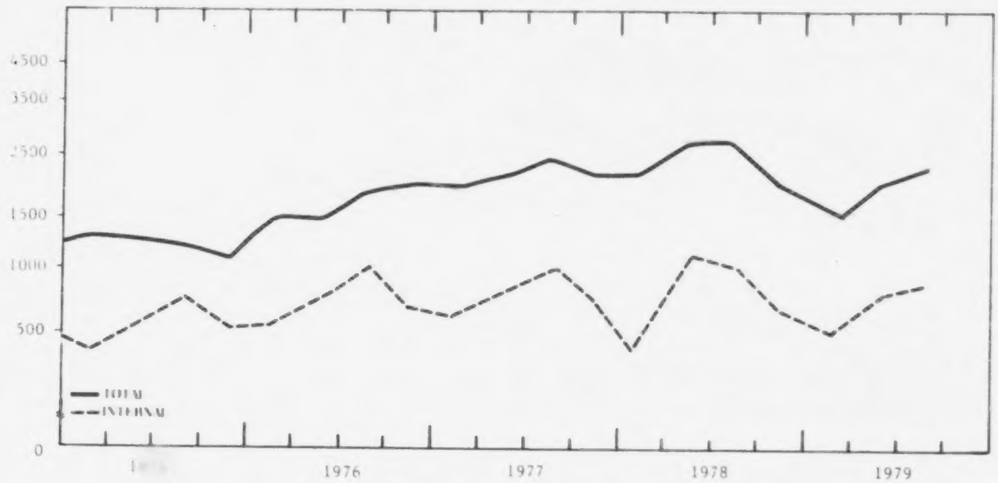
Thousands of dollars, not seasonally adjusted

Quarter	1971	1972	1973	1974	1975	1976	1977	1978	1979
Jan-Mar	24,546	33,213	47,676	56,094	79,225	43,591	57,486	72,851	88,988
Apr-Jun	52,512	45,800	40,140	63,607	67,424	93,906	63,726	60,479	109,976
Jul-Sep	28,546	51,564	63,776	106,530	45,566	67,913	67,632	90,471	70,296
Oct-Dec	37,632	57,002	54,446	56,247	89,446	79,004	76,866	69,041	
Annual	143,236	187,579	206,038	272,478	281,661	284,414	265,710	292,842	

WATERBORNE COMMERCE

McCLELLAN-KERR ARKANSAS RIVER NAVIGATION SYSTEM

(Quarterly data in thousands of short tons, not seasonally adjusted)



(Semi-logarithmic scale: equal slopes indicate equal rates of change)

Base Year to Date and Quarterly Changes in Total and Internal Tonnages

Not seasonally adjusted, percent
(Base: Av. Qtr. 1971)

	1971 to 1979 Q-III	1978 Q-III to 1978 Q-IV	1979 Q-IV to 1979 Q-I	1979 Q-I to 1979 Q-II	1979 Q-II to 1979 Q-III
Total	+ 162.6	- 23.2	- 11.9	+ 9.3	+ 13.5
Internal	+ 42.4	- 25.7	- 25.8	+ 45.3	+ 18.1

FREIGHT TRAFFIC

ARKANSAS RIVER COMMERCE

Thousands of short tons, not seasonally adjusted.

TIME PERIOD	TRAFFIC TONNAGES*			
	INBOUND	OUTBOUND	INTERNAL	TOTAL
1972	1,174	1,031	3,463	5,668
1973	1,802	656	2,674	5,132
1974	1,950	775	2,959	6,060
1975	1,440	870	2,465	5,204
1976	1,988	1,663	3,033	7,078
1977	2,841	2,339	3,463	9,138
1978	2,595	3,899	3,170	10,216
1979				
Q-I	467	720	503	1,930
Q-II	477	785	731	2,109
Q-III	541	919	864	2,394

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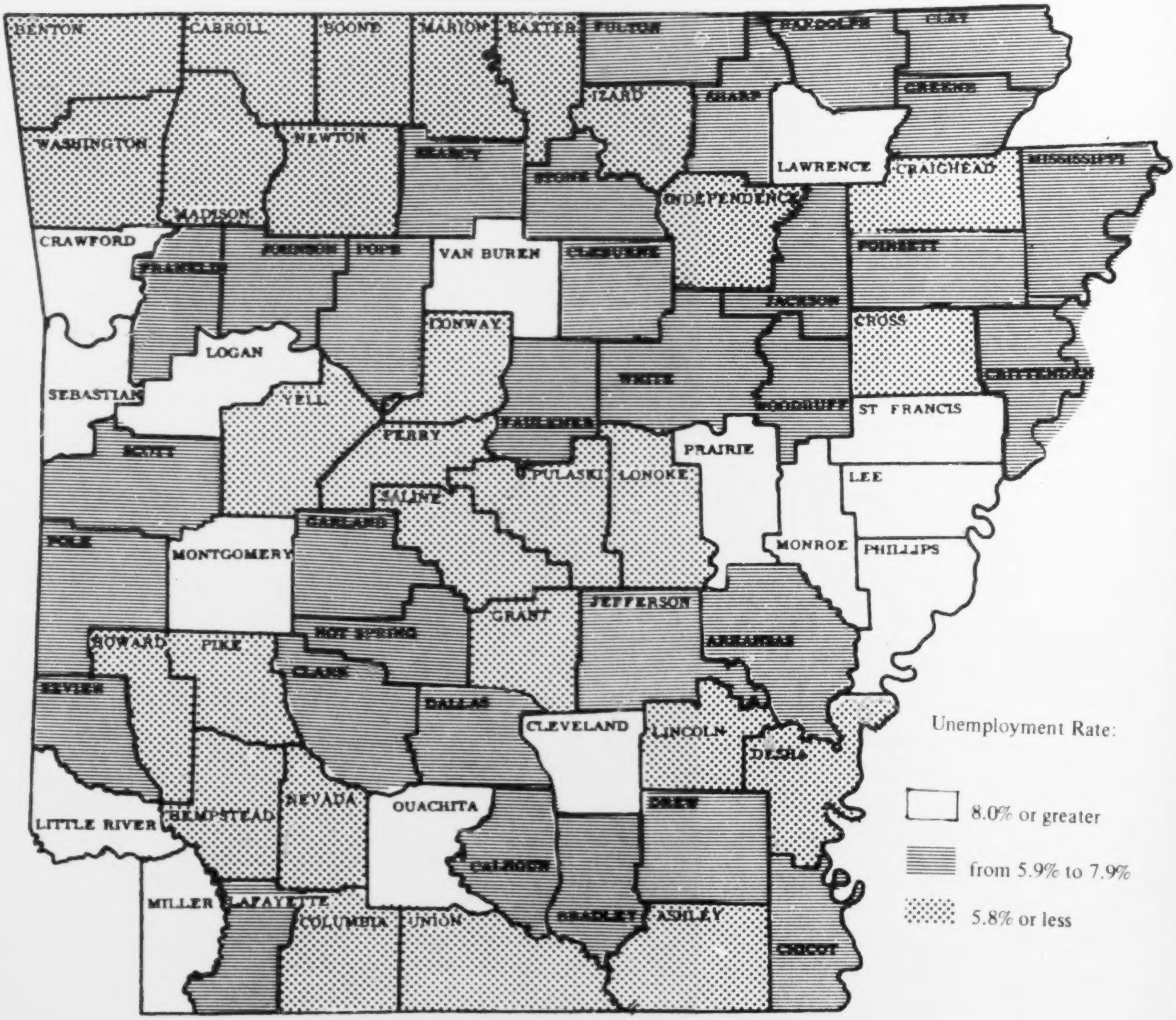
*Total tonnage includes "through traffic"--shipments which originate and terminate outside the Arkansas River Commerce Area.

PRELIMINARY LABOR FORCE ESTIMATES— SEPTEMBER 1979

Total employment in the State of Arkansas dropped 10,900 below the August level of 940,400 to 929,500 in September. The reduction in the level of employment resulted in the civilian labor force's being pushed below the one million mark for the first time since having achieved that status in July. Statewide, the number of persons unemployed totaled 60,000, a decrease of 1,800 since the previous month. Consequently, the rate of joblessness declined from 6.2 percent to 6.1 percent. Unemployment rates for the 75 counties ranged from a low of 3.3 percent in Howard County to a high of 12.8 percent in Phillips County. Forty-three counties had rates equal to or greater than the 6.1 percent rate for the State. Of these counties, fifteen had rates higher than 8.0 percent. Twenty-eight counties had rates less than or equal to the national rate of 5.8 percent.


BENTON
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SEARCY
STONE
LAWRENCE
CRAIGHEAD
MISSISSIPPI
MADISON
INDEPENDENCE
CRAWFORD
FRANKLIN
JOHNSON
POPE
VAN BUREN
CLEBURNE
POINSETT
JACKSON
CROSS
CONWAY
LOGAN
WHITE
CRITTENDEN
SEBASTIAN
YELL
WOODRUFF
ST FRANCIS
PERRY
FAULKNER
SCOTT
PRAIRIE
PULASKI
LONOKE
LEE
SALINE
GARLAND
POLK
MONTGOMERY
MONROE
PHILLIPS
GRANT
JEFFERSON
HOWARD
PIKE
HOT SPRING
ARKANSAS
CLARK
SEVIER
DALLAS
CLEVELAND
LINCOLN
DESHA
LITTLE RIVER
HEMPSTEAD
NEVADA
OUACHITA
DREW
CALHOUN
MILLER
LAFAYETTE
COLUMBIA
UNION
BRADLEY
ASHLEY
CHICOT
Unemployment Rate:
☐ 8.0% or greater
▤ from 5.9% to 7.9%
░ 5.8% or less

PRELIMINARY LABOR FORCE ESTIMATES–SEPTEMBER 1979

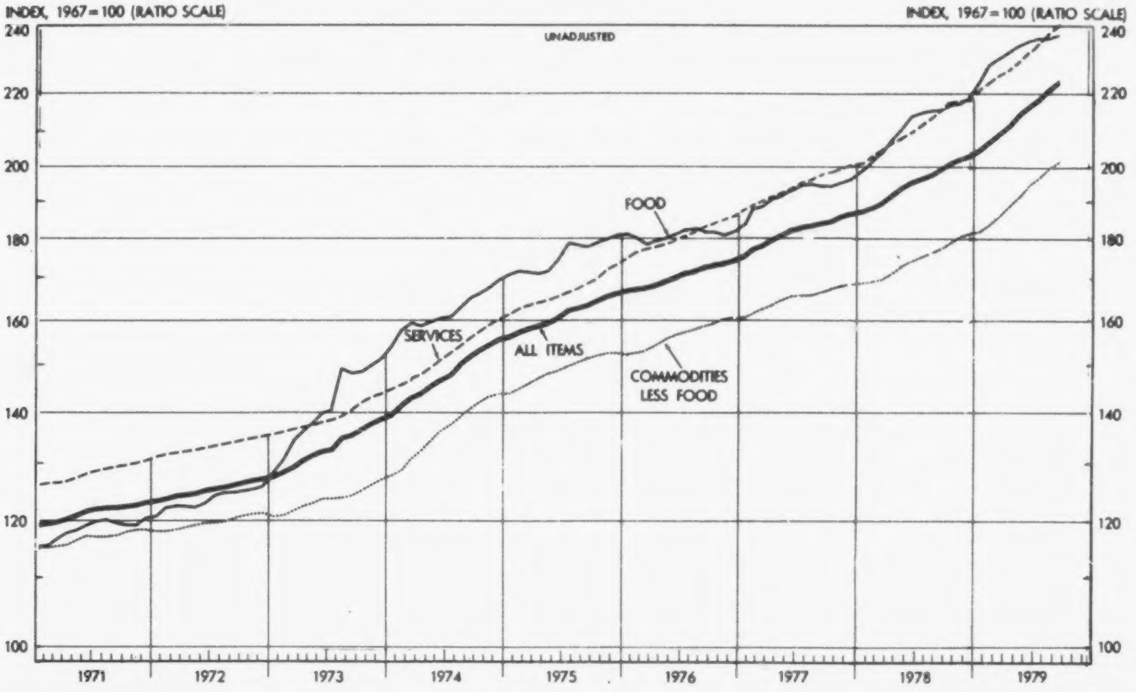
State and SMSA's	Civilian Labor Force	Unemployment Rate	Total Employment
UNITED STATES	103,373,000	5.6	97,576,000
STATE OF ARKANSAS	989,500	6.1	929,500
Fayetteville-Springdale SMSA (Benton & Washington Counties)	76,300	4.2	73,100
Fort Smith SMSA (Crawford & Sebastian Counties in Arkansas and LeFlore & Sequoyah Counties in Oklahoma)	83,750	7.7	77,300
Little Rock-North Little Rock SMSA (Pulaski & Saline Counties)	186,800	4.4	178,500
Pine Bluff SMSA (Jefferson County)	38,600	6.2	36,225

County	Civilian Labor Force	Unemployment Rate	Total Employment	County	Civilian Labor Force	Unemployment Rate	Total Employment
Arkansas	12,625	6.9	11,750	Lee	5,175	11.1	4,600
Ashley	10,975	5.7	10,350	Lincoln	3,925	5.7	3,700
Baxter	9,625	5.5	9,100	Little River	5,200	8.7	4,750
Benton	31,350	4.5	29,950	Logan	7,375	8.5	6,750
Boone	11,925	4.2	11,425	Lonoke	15,400	3.9	14,800
Bradley	5,775	6.5	5,400	Madison	5,200	4.3	4,975
Calhoun	2,025	7.4	1,875	Marion	5,175	5.3	4,900
Carroll	7,450	4.4	7,125	Miller	14,400	8.2	13,225
Chicot	7,125	6.3	6,675	Mississippi	26,525	6.8	24,725
Clark	9,300	5.9	8,750	Monroe	5,500	8.2	5,050
Clay	8,900	7.6	8,225	Montgomery	2,500	8.0	2,300
Cleburne	6,075	6.2	5,700	Nevada	4,400	4.5	4,200
Cleveland	2,175	8.0	2,000	Newton	2,900	5.2	2,750
Columbia	12,700	5.1	12,050	Ouachita	11,550	8.0	10,625
Conway	8,100	5.2	7,675	Perry	3,175	4.7	3,025
Craighead	31,050	5.4	29,375	Phillips	14,050	12.8	12,250
Crawford	15,425	8.6	14,100	Pike	4,475	5.0	4,250
Crittenden	24,000	6.0	22,550	Poinsett	11,575	6.5	10,825
Cross	9,525	5.8	8,975	Polk	5,725	7.0	5,325
Dallas	4,250	7.6	3,92[illegible]	Pope	16,375	7.5	15,150
Desha	7,775	5.1	7,375	Prairie	3,650	8.2	3,350
Drew	8,450	6.5	7,900	Pulaski	164,275	4.5	156,925
Faulkner	20,725	6.4	19,400	Randolph	7,575	6.9	7,050
Franklin	6,300	7.1	5,850	St. Francis	13,425	10.6	12,000
Fulton	3,100	6.5	2,900	Saline	22,525	4.2	21,575
Garland	29,550	6.9	27,525	Scott	3,150	7.9	2,900
Grant	4,625	5.4	4,375	Searcy	2,625	7.6	2,425
Greene	14,025	6.4	13,175	Sebastian	41,500	8.8	37,850
Hempstead	10,825	4.2	10,375	Sevier	5,825	6.0	5,475
Hot Spring	10,800	6.9	10,050	Sharp	4,150	7.2	3,850
Howard	7,550	3.3	7,300	Stone	3,350	6.0	3,150
Independence	14,275	5.4	13,500	Union	23,275	5.0	22,100
Izard	3,850	5.8	3,625	Van Buren	3,875	9.0	3,525
Jackson	10,075	6.9	9,375	Washington	44,950	4.0	42,150
Jefferson	38,600	6.2	36,225	White	21,650	7.6	20,000
Johnson	7,875	6.3	7,375	Woodruff	4,675	6.4	4,375
Lafayette	3,700	6.8	3,450	Yell	7,725	5.2	7,325
Lawrence	8,225	8.2	7,550				

Source: The Research and Statistics Section, Arkansas Employment Security Division.

CONSUMER PRICES

In September, the consumer price index for all urban consumers rose 1.0 percent (1.1 percent seasonally adjusted). Food prices rose 0.3 percent (0.9 percent seasonally adjusted). Nonfood commodity prices rose 1.2 percent (also 1.2 percent seasonally adjusted) and services prices were up 1.3 percent (1.1 percent seasonally adjusted).



SEE NOTE ON TABLE BELOW
SOURCE: DEPARTMENT OF LABOR

COUNCIL OF ECONOMIC ADVISERS

[1967=100]

Period	All items	Food	Commodities less food	Services	All commodities	Food			Commodities less food			Services
						All	Food at home	Food away from home	All	Durable	Nondurable	
1971	121.3	118.4	116.8	128.4	117.4	118.4	116.4	126.1	116.8	116.5	117.0	128.4
1972	125.3	123.5	119.4	133.3	120.9	123.5	121.6	131.1	119.4	118.9	119.8	133.3
1973	133.1	141.4	123.5	139.1	129.9	141.4	141.4	141.4	123.5	121.9	124.8	139.1
1974	147.7	161.7	136.6	152.1	145.5	161.7	162.4	159.4	136.6	130.6	140.9	152.1
1975	161.2	175.4	149.1	166.6	158.4	175.4	175.8	174.3	149.1	145.5	151.7	166.6
1976	170.5	180.8	156.6	180.4	165.2	180.8	179.5	186.1	156.6	154.3	158.3	180.4
1977	181.5	192.2	165.1	194.3	174.7	192.2	190.2	200.3	165.1	163.2	166.5	194.3
1978	195.4	211.4	174.7	210.9	187.1	211.4	210.2	218.4	174.7	173.9	174.3	210.9
	Unadjusted				Seasonally adjusted							
1978: Sept	199.3	215.6	177.8	215.6	190.2	216.0	214.5	223.1	177.2	176.8	176.5	215.7
Oct	200.9	216.8	179.1	217.6	191.7	217.9	216.5	224.7	178.5	178.3	177.4	217.6
Nov	202.0	217.8	180.3	218.6	193.0	219.2	217.8	226.0	179.8	180.1	178.3	218.7
Dec	202.9	219.4	181.3	219.2	194.6	221.3	220.1	227.8	181.3	181.6	179.4	219.5
1979: Jan	204.7	223.9	181.9	221.1	196.7	224.5	223.7	230.7	182.9	183.3	181.4	220.7
Feb	207.1	228.2	183.7	223.3	199.1	228.1	227.7	233.6	184.8	185.1	182.9	223.1
Mar	209.1	230.4	185.9	225.1	201.3	230.5	230.0	236.2	186.9	186.0	186.4	225.1
Apr	211.5	232.3	188.9	227.0	203.8	232.7	232.4	238.2	189.4	187.6	190.0	227.2
May	214.1	234.3	191.6	229.5	205.7	234.3	233.5	240.9	191.4	188.6	193.4	230.1
June	216.6	235.4	194.7	232.1	207.7	234.7	233.2	242.9	193.9	190.1	197.4	232.5
July	218.9	236.9	197.0	234.7	209.5	235.0	233.0	244.4	196.3	191.5	201.5	235.0
Aug	221.1	236.3	199.5	237.6	211.4	235.0	232.3	246.0	198.9	192.8	205.4	237.8
Sept	223.4	237.1	201.8	240.7	213.8	237.1	234.8	247.4	201.3	194.1	209.0	240.4

NOTE.—Beginning January 1978 data relate to all urban consumers. Earlier data related to urban wage earners and clerical workers.

Source: Department of Labor, Bureau of Labor Statistics.

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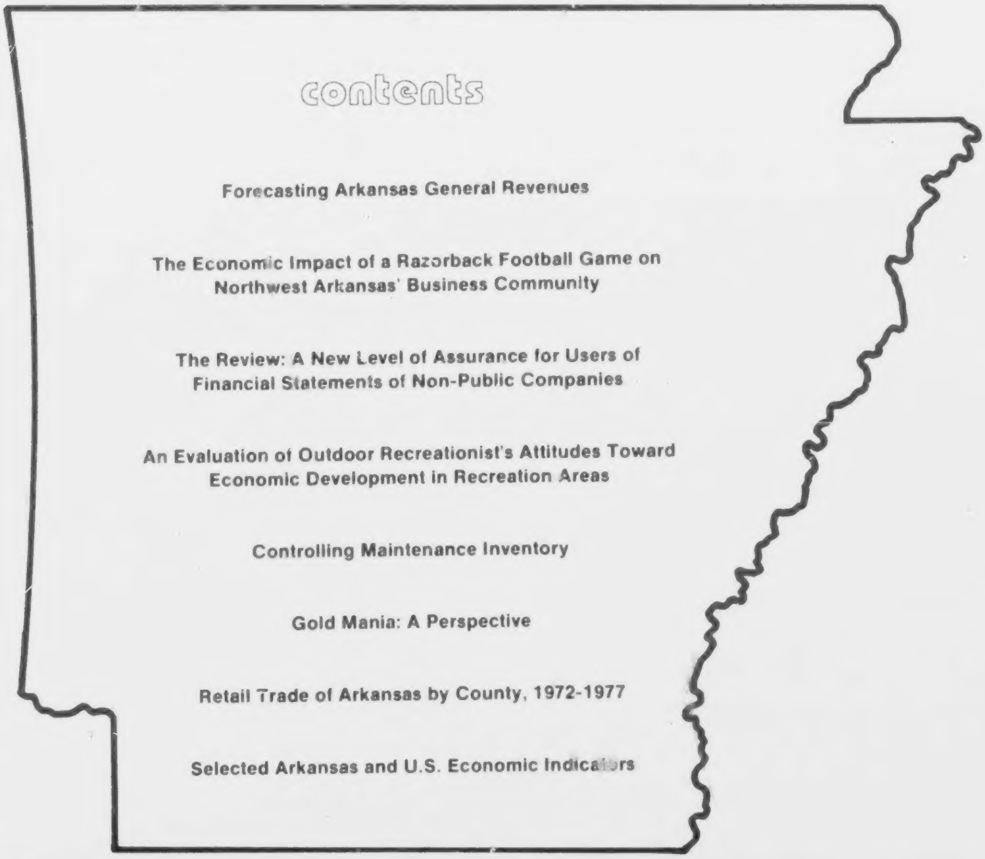
A Publication of the University of Arkansas

Spring 1980



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An Evaluation of Outdoor Recreationist's Attitudes Toward Economic Development in Recreation Areas

Controlling Maintenance Inventory

Gold Mania: A Perspective

Retail Trade of Arkansas by County, 1972-1977

Selected Arkansas and U.S. Economic Indicators

Arkansas Business and Economic Review

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In an effort to ensure that the articles appearing in the *Review* meet standards consistent with the goals of the College of Business Administration and of the University of Arkansas, an Editoral Advisory Board has been created to referee manuscripts submitted for publication. The current members of the Board are:

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The *Arkansas Business and Economic Review* is dedicated to information relevant to the business and economic environment of Arkansas. Manuscripts are solicited in these general subject areas:

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2. Regional and industrial problems that have implications for the Arkansas economic community;
3. National business and economic issues of general interest to the people of Arkansas; and
4. Business and economic theory.

As a minimum, to be accepted for publication a manuscript must have literary value and the research upon which it is premised must have been conducted in a scientifically valid manner. Thereafter, the order of enumeration of the subject areas designates the system of priorities that will be applied in ascertaining the publishability of a manuscript. (However, the system of priorities will not be applied in such a way as to completely exclude any of the four categories of articles.)

Form requirements for manuscripts include double spaced originals with each chart or graph prepared in ink (camera ready) on a separate sheet. Manuscripts and all inquiries should be addressed to Editor, *Arkansas Business and Economic Review*, Bureau of Business and Economic Research, College of Business Administration, University of Arkansas, Fayetteville, Arkansas 72701, Telephone (501) 575-4151.

FORECASTING ARKANSAS GENERAL REVENUES

John C. Pickett
Former Commissioner
Arkansas Public Service Commission

HISTORY

Prior to 1945, virtually all revenues collected by the State of Arkansas were earmarked for various purposes by assigning to a particular agency a percentage of revenues collected from a particular source. Such a system was inefficient because it did not permit the legislature to fulfill its legislative responsibilities by allocating funds to those areas that were in the greatest need. As a consequence, Governor Ben Laney proposed the Revenue Stabilization Plan. The Revenue Stabilization Plan, as originally proposed, was adopted in 1945 and has continued to be the primary vehicle through which the constitutional requirement for a balanced State budget is satisfied. Meanwhile, it has permitted the legislature to allocate funds, via a Revenue Stabilization Act, to those programs with the greatest need.

That Revenue Stabilization Act sets rigorous standards which insure that expenditures equal revenues. To accomplish this equality, an estimated annual revenue forecast is prepared and funds are classified and released for expenditure only when revenues are expected to be adequate to fund the expenditures. In order to achieve the equality between revenues and expenditures, expenditures are classified by priority. The highest priority expenditures must be funded first. If revenues exceed the total of the highest priority expenditures, then expenditures of lower priority are funded from the revenues which exceed the highest priority expenditures. Establishment of priorities for expenditures permits the General Assembly to allocate funds among competing needs and insures that revenues equal expenditures.

PROBLEM

Budget control requires authority over both expenditures and revenues. Clearly, expenditures may be controlled directly. Revenue control presents certain difficulties. The direct control over revenues exists by the General Assembly's authority over the tax rate and the tax base. However, the tax base is a stochastic variable and cannot be controlled directly. Herein is the source of the problem. The required equality of revenues and expenditures can be achieved without an almost certain surplus only if revenue forecasts are accurate.

REVENUE CLASSIFICATION

State revenues are classified as either special or general. Special revenues are those that are generally directly assignable to specific uses. Examples are fuel taxes used to finance the Highway Department and hunting and fishing license revenues that fund Game and Fish expenditures.

General revenues are all other revenue sources to State government. The individual and corporate income taxes, sales and use taxes, tobacco, alcoholic beverage, insurance, racing, severance, franchise, estate, real estate transfer, and miscellaneous taxes are the sources of general revenues.

FORECASTING GENERAL REVENUES

Ordinary least squares (OLS) technique has been widely used to estimate the functional relationship among independent and dependent variables. The use of OLS requires the investigator to adopt the statistical assumptions upon which the technique is based. It is now recognized that the data may not reflect those assumptions upon which the procedures are based. Analysis based on data which does not satisfy the underlying assumptions will produce invalid results. Policy decisions based upon invalid results are possibly harmful.

OLS models are based upon the following assumptions associated with error terms and the exogeneous variables. These are:

1) The exogeneous variables are fixed regressors that assume different values which are determined externally to the model.

2) The expected value of the disturbance terms is zero.

3) The variance of disturbance, ϵ_t, is not infinite and is constant for all $t = 1, 2, \ldots, T$.

4) The disturbance terms ϵ_i and ϵ_j are independent of each other for $i \neq j$ and both $i, j = 1, 2, \ldots, T$.

And, in order to use the standard statistical testing procedures, another assumption is needed:

5) The disturbance terms are normally distributed random variables.

An alternative estimation technique is available. The seminal work of Box and Jenkins (B-J) provides the theoretical foundation for estimating the correct temporal relationship of a variable and its previous observations and among a set of dependent and independent variables.[1] There are a number of reasons why B-J models are preferable to OLS models. First, all assumptions concerning the error terms are satisfied. Second, the exogeneous variables are assumed stochastic and not fixed. Third, the estimation technique is nonlinear and is not assumed linear. Fourth, the confidence intervals can be written for the forecasted values of the dependent and independent variables.

DATA

The Arkansas Department of Finance and Administration maintains monthly series of Total General Revenues (TGR). The monthly observations may be summed to form the quarterly series. Such quarterly series are preferable in order to avoid adjusting monthly series to reflect mail strikes, number of business days and other similar effects.

An analyst may construct a univariate B-J model or a multivariate transfer function model. The immediate problem is to identify theoretically the independent variables. Two are obvious. Since the majority of general revenues are received from sales and income taxes, the two most likely independent variables are total retail sales and total personal income (Y) in millions of dollars at annual rates. The latter data are prepared by the Bureau of Economic Analysis of the Department of Commerce.

One may also attempt to include retail sales as an independent variable. However, the difficulty is that there is no series available. One may estimate retail sales from the sales-and-use tax revenue data, but such a reconstructed variable would track the tax revenues exactly; therefore, no additional information beyond that already embedded in the revenue series could be obtained from the sales series.

First, the Box-Jenkins methodology requires the identification of a univariate model for each of the series. Second, the cross correlation function is examined between TGR and Y to determine if any dependency exists. Third, given the correct model, forecasts are developed for the TGR series.

The univariate B-J model in backshift notation for TGR follows.[2] The model is estimated for the period I/1969 - III/1979. The t-values are in parentheses:

$$\underset{(2.4)}{(1 - .294\beta_1} \; \underset{(3.3)}{- .466\beta_2)} (1 - B_4)TGR = \underset{(1.96)}{.154} + (1 + \underset{(3.7)}{.519\beta_4})at$$

$$R^2 = .9942$$

$$RSS = 1208$$

$$\chi^2 = 13.4$$

The summary statistics are in terms of the original (untransformed) data. The mean of the residual series is not significant. The errors are normally distributed with no significant autocorrelation up to lag 26. The transformation parameter insures the series has constant variance.

The model for Arkansas total personal income is:

$$(1 - B)Y^{-.6} = -.029 + \epsilon_t \; (-1.9)$$

$$R^2 = .992$$

$$RSS = 12.65$$

$$\chi^2 = 10.1$$

The mean of the residuals is zero. The transformation parameter insures the residuals exhibit constant variance.

The residuals are normally distributed with no significant autocorrelations up to lag 26.

The dynamics of the parameters over time is of interest. The data were separated into two groups and a Chow test made to test for significant differences between the groups. At a 99% confidence level, the parameters were stable over time.

The technique used to identify significant functional dependencies among variables is to examine the cross correlation function. The cross correlation function between the residuals from the univariate model for TGR and Y is examined for both ± lags. Unidirectional dependencies and feedback may be identified from this function.

The cross correlations between TGR and Y for positive lags are:

Lag	Cross Correlations	Lag	Cross Correlations
0	.000	7	-.015
1	.009	8	.131
2	.024	9	.023
3	-.058	10	.082
4	-.126	11	.139
5	-.155	12	-.071
6	-.102		

Negative lags indicate the dependency flows from TGR to Y. This is not indicated by an examination of the negative cross correlations. None were significant.

The approximate standard error is .128. No cross correlation is statistically significant which indicates total personal income is not driving TGR. Therefore, no new information, as measured by a reduction in the residual sum of squares, would become available if the income series were included as a driving variable.

FORECASTS

The univariate model may be simplified to the following equation.[3]

$$\begin{aligned} TGR^{.2} = {} & .0154 + .2941\ TGR^{.2}_{t-6} + .4661\ TGR^{.2}_{t-2} \\ & + TGR^{.2}_{t-4} - .2941\ TGR^{.2}_{t-5} \\ & - .4661\ TGR^{.2}_{t-6} + .5196a_{t-4} \end{aligned}$$

The quarterly forecasts in millions of dollars, where III/79 is the origin with a 95% confidence interval are:

Table 1

CROSS GENERAL REVENUES

Period	Lower	Forecast	Upper
IV/79	$171.0	$189.0	$208.6
I/80	196.1	217.1	239.9
II/80	251.6	280.8	312.6
III/80	206.5	232.3	260.6
IV/80	182.7	211.3	243.3
I/81	209.1	242.0	278.9
II/81	268.9	311.3	358.7
III/81	221.5	258.5	300.4

These forecasts are for gross general revenues. Arkansas Statutes require that three percent of gross general revenues be withheld for administrative expenses. Also, actual monthly income tax refunds are deducted from gross general revenues, Ark. Stat. Ann. Section 13-510 and 511 (1979). The quarterly amount actually available for expenditures is gross revenues less the three percent less actual income tax refunds.

Class A expenditures for the 1979-80 fiscal year equal 862.7 million.[4] Third quarter 1979 actual revenues added to the remaining three quarter forecasts equals $895.3 million. The forecast for 1980 gross general revenues is 3.8% above the Class A expenditures. The forecast for net general revenues, excluding income tax refunds, is only .67% above proposed expenditures. Using III/79 actual and the 97% of the lower bound forecast for the remaining three quarters in fiscal 1980, produces a revenue shortfall equal to 9.3%.

The ability of the model to be updated quarterly has advantages for prudent expenditure control. The appropriate policy at the moment is to release funds in an amount equal to the net receipts to date plus the 95% lower bound of the adjusted forecasts for the remaining quarters in the current fiscal year. At this time, general revenue agencies should be authorized to spend 96% of their net "A" allotments.

There are advantages to the model's ability to update forecasts. A model for the period ending III/78 was estimated and, as the next four quarterly actual receipts became available, the actual receipts were used to update

Table 2

GROSS GENERAL REVENUES

	Forecast's Origin				
Forward Periods	III/78	I/79	II/79	III/79	Actual
IV/78	$174.7				$169.5
I/79	198.1	$196.4			195.8
II/79	259.2	255.1	$154.9		252.8
III/79	212.7	210.9	210.4	$209.9	208.2
IV/79	195.7	190.9	190.7	189.7	
I/80	222.1	219.6	219.0	218.5	
II/80	288.3	284.2	283.9	282.0	

the forecasts. The following table presents the updated forecasts for gross general revenues.

The root mean square errors for one, two, three periods ahead (n = 4, 3, and 2, respectively) are $2.94, $4.12, and $4.91 million. The average errors for the same periods are $2.4, $3.6, and $4.5 million. The average percentage errors are 1.21%, 1.59%, and 1.91%. These errors are for gross general revenues.

SUMMARY

The characteristics of small errors, the ability of the model to provide updated forecasts, and the ability to re-estimate the model periodically, all contribute to the conclusion that the B-J model is a significant aid in expenditure control of general revenues. The model is not only statistically superior to other forecasting techniques but also eminently practical.

FOOTNOTES

[1] G.E.P. Box and J.M. Jenkins, Time Series Analysis (San Francisco: Holden Day, Inc., 1976).

[2] There are numerous B-J computing packages available. The most sophisticated and efficient is available from Automatic Forecasting Systems, P.O. Box 563, Hatboro, PA 19040.

[3] The data series for both TGR_t and a_t may be obtained from the author.

[4] 1979 Ark. Acts No. 1115, Section 1(A).

THE ECONOMIC IMPACT OF A RAZORBACK FOOTBALL GAME ON NORTHWEST ARKANSAS' BUSINESS COMMUNITY

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Recently, we had occasion to survey our 8,600 non-student season ticket holders to Razorback football games.[1] One of the questions we asked 492 randomly selected season ticket holders was "How much money do you spend when you attend an afternoon football game?" The underlying purpose was to determine the economic impact on the Northwest Arkansas business community.

Using the information provided by 266 respondents, we estimated the amount of various expenditures by all season ticket holders and also made estimates of these same expenditures by other types of ticket holders. The results of the analysis indicated that fans typically spend $1,101,000 in attending a Saturday afternoon game played in Fayetteville. Table 1 provides the details by expenditure and type of ticket holder.

An obvious implication is that the gas stations, restaurants, motels, and stores are affected directly by fan expenditures. Given an expenditure multiplier of 1.5, the initial $1.1 million would result ultimately in economic impacts totaling $1.65 million on those as well as other businesses.

Since three Saturday afternoon games are played in Fayetteville each year, the direct economic impact of the expenditures of Razorback football fans is $3.3 million, with a total economic impact of $4.95 million. Certainly not all this amount is spent in Northwest Arkansas, but it seems reasonable to assume that a major portion would be.

The importance of football games to the Northwest Arkansas economy is further highlighted by the geographic distribution of the respondents to the questionnaire. The Northwest Arkansas counties of Benton and Washington provide only 14 percent of the season ticket holders; hence, the remaining 86 percent travel from outside the immediate area to attend the games. Pulaski County alone apparently accounts for 21 percent of the season ticket holders, and 7 percent are from outside Arkansas itself.

The ticket and concession expenditures for each game total $344,000. Since these expenditures are at the game site, they impact, in total, on the area economy. If only one-half of the remaining expenditures take place in Northwest Arkansas, the total direct expenditures for a typical Saturday afternoon game is $722,500; then

Table 1

ESTIMATES OF FAN MONEY SPENT ON A RAZORBACK SATURDAY AFTERNOON FOOTBALL GAME

Category of Tickets	No. of People Attending A Razorback Game in Fayetteville	Transportation To and From (Average of $26.54 For Season Ticket Holders)	Food (Average of $23.37 For Season Ticket Holders)	Lodging (Average of $11.63 For Season Ticket Holders)	Concessions ($1.25 Average Per Fan)	Entertainment (Average of $5.70 For Season Ticket Holders)	Other Purchases (Average of $10.40 For Season Ticket Holders)	Tickets
1. Non-student Season Sold (5214 Season Tickets Holders)	23,438	$138,379	$121,851	$60,638	$29,277	$29,719	$54,225	$199,223
2. Student Season Tickets Sold	6,932	--	--	--	8,665	10,000*est	--	29,461
3. Faculty and Staff Season Tickets Sold	1,598	--	--	--	1,997	4,000*est	--	6,791
4. End Zone Season Tickets Sold (est. 1,200 Holders)	2,400	31,848	28,044	13,956	3,000	6,840	12,480	10,400
5. Single Game Tickets Sold (est. 2,000 Holders)	3,268	53,080	46,740	23,260	4,085	11,400	20,800	27,778
6. Complimentary Tickets	1,200	--	--	--	1,500	3,600*est	--	--
7. Band Tickets	385	--	--	--	481	1,000*est	--	--
8. Visiting Team Tickets Sold (est. 1,100 Holders)	2,200	41,446	25,707	12,793	2,750	5,270	11,440	18,700
TOTAL	41,421	$264,853	$222,342	$110,647	$51,775	$71,829	$88,945	$292,353

Table 2

SAMPLE INFORMATION SOURCES

Universe

7,400	Priority season ticket holders, including local
1,200	Non-priority season ticket holders, including local
8,600	Total, including local and non-local

Sample Size

440	Priority season ticket holders (.059 of 7,400)
52	Non-priority holders (.043 of 1,200)
492	Total sample, selected at random (.057 of 8,600)

Results of Survey

492	Sample size
266	Replies received (54% of total sample)

Money Spent on Activities	Total		Replies		Average*
From Replies Received					
Transportation (to and from)	$7,059	÷	266	=	$26.54
Food	6,216	÷	266	=	23.37
Lodging	3,094	÷	266	=	11.63
Concessions	From Department Records				1.25
Entertainment	1,516	÷	266	=	5.70
Other Purchases	2,766	÷	266	=	10.40
Tickets	From Department Records				

*Assumptions

The same amount would be spent on the average by end zone holders, single game holders, and visiting team holders.

using a 1.5 multiplier, the total impact amount becomes $1,084,000. Over the three-game home schedule, the impact would be $3,251,000. Thus, Razorback football is a substantial "three-day" industry in Northwest Arkansas.

FOOTNOTES

[1] For those readers who might be interested, we found that there was a fairly even split among the season ticket holders as to playing night football games:

Favor night games	112
Do not favor	110
Don't know	44
TOTAL	266

In addition, we found that those 266 season ticket holders from the sample purchased 1194 tickets. The same 266 season ticket holders in the sample would purchase 1081 tickets if the games were held at night, a decline of 9%. Keep in mind that we did not seek opinions on non-tickets holders. Perhaps if we did, there might be more people who would attend a night game, especially those people who have to be occupied on Saturday afternoons.

SPECIAL NOTE

The authors wish to acknowledge the help received by Lon Farrell, Assistant Athletic Director; Monroe Harrison, Ticket Manager; Ray Shipman, Business Manager; and Ab Bidwell, Emeritus, in the preparation of this article.

THE REVIEW: A NEW LEVEL OF ASSURANCE FOR USERS OF FINANCIAL STATEMENTS OF NONPUBLIC COMPANIES

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INTRODUCTION

Until recently the users of financial statements such as bankers and investors have had to be satisfied with all or nothing when considering the levels of assurance they desired or required from CPAs on financial statements. Their options were either (1) a complete audit that, absent any material uncertainties, inconsistencies, audit scope limitations or departures from generally accepted accounting principles, would lead to a report from the CPA containing positive assurance that the financial statements were fairly presented in conformity with generally accepted accounting principles or (2) unaudited financial statements with a report from the CPA containing no assurance regarding the financial statements. Unaudited financial statements prepared by a CPA were required to include the same complete disclosures and footnotes, including information regarding leases and pensions, as audited financial statements, although this may not always have been followed in practice.

Many owners of non-public companies, which generally tend to be small businesses, want or need periodic financial statements that will have some credibility with suppliers and creditors; however, they do not need the positive assurance of an audit nor do they want to incur the costs associated therewith. Similarly, bankers and other creditors of small businesses may consider factors such as personal reputation of the owner, personal guarantees of the owner, and collateral to be more important in the evaluation of the ultimate collectivity of the amounts due them than the form of CPA assurance attached to a set of financial statements. Nevertheless, they cannot prudently ignore the financial statements of the small business and have been faced with the decision of requiring either a complete and perhaps costly audit or receiving no assurance from the CPA regarding the financial statements. Also, many individual CPAs and small CPA firms that serve small businesses were concerned about the limited options available to their clients.

To resolve this dilemma, a committee of the American Institute of Certified Public Accountants issued a statement that became effective July 1, 1979, and provides for three levels of assurance for non-public companies. These are (1) a compilation that provides no assurance, (2) a review that provides limited assurance, and (3) an audit that provides positive assurance. Each of these levels is discussed below to assist users of financial statements in determining the level of assurance that is appropriate for their needs.

A COMPILATION

A compilation is similar to what was previously referred to as unaudited, and is defined as "presenting in the form of financial statements information that is the representation of management (owners) without undertaking to express any assurance on the statements."[1] In performing a compilation, a CPA should understand the general nature of the client's industry, business transactions, and accounting records; but he is not required to make inquiries or perform any procedures to verify any information in the financial statements.

Compiled financial statements may either contain or omit substantially all disclosures required by generally accepted accounting principles. The following is the form of an auditor's report for a compilation in which substantially all disclosures are omitted; if all disclosures are presented, the last paragraph would not be applicable:

> The accompanying balance sheet of XYZ Company as of December 31, 19xx and the related statements of income, retained earnings, and changes in financial position for the year then ended have been compiled by me (us).
>
> A compilation is limited to presenting in the form of financial statements information that is the representation of management (owners). I (we) have not audited or reviewed the accompanying financial statements and, accordingly, do not express an opinion or any other form of assurance on them.
>
> Management has elected to omit substantially all of the disclosures (and the statement of changes in financial position) required by generally accepted accounting principles. If the omitted disclosures were included in the financial statements, they might influence the user's conclusions about the company's financial position, results of operations, and changes in financial position. Accordingly, these financial statements are not designed for those who are not informed about such matters.[2]

While the user would seem to be justified in expecting the CPA's expertise to detect obvious errors or omissions in the financial statements even though no review or audit procedures were performed, the accounting profession apparently intends for the user to place no more reliance upon compiled financial statements than he or she would upon financial statements prepared by management or the financial employees of a company.

A REVIEW

A review of financial statements involves "performing inquiry and analytical procedures that provide the accountant with a reasonable basis for expressing limited assurance that there are no material modifications that should be made to the statements in order for them to be in conformity with generally accepted accounting principles or, if applicable, with another comprehensive basis of accounting."[3] A review thus falls between a compilation and an audit in the level of assurance a CPA can provide on financial statements. The inquiry and analytical procedures are designed to bring significant matters affecting the financial statements to the CPA's attention, but they do not provide assurance that all such matters would be disclosed. Examples of inquiries would include those concerned with the client's application of accounting principles and methods of accumulating information for the financial statements, actions taken at meetings of stockholders and board of directors, and changes in business activity and accounting principles. Analytical procedures would be designed to detect items that are unusual in nature. Also, they might include comparison of the amounts in the financial statements with prior year and budgeted amounts, and a study of relationships that might be expected to exist in the financial statements such as changes in sales and changes in accounts receivable.

The form of a report for a review is as follows:

> I (we) have reviewed the accompanying balance sheet of XYZ Company as of December 31, 19xx, and the related statements of income, retained earnings, and changes in financial position for the year then ended, in accordance with standards established by the American Institute of Certified Public Accountants. All information included in these financial statements is the representation of the management (owners) of XYZ Company.
>
> A review consists principally of inquiries of company personnel and analytical procedures applied to financial data. It is substantially less in scope than an examination in accordance with generally accepted auditing standards, the objective of which is the expression of an opinion regarding the financial statements taken as a whole. Accordingly, I (we) do not express such an opinion.
>
> Based on my (our) review, I am (we are) not aware of any material modifications that should be made to the accompanying financial statements for them to be in conformity with generally accepted accounting principles.[4]

While a review ranks between an audit and a compilation in the level of assurance that a CPA gives on financial statements, the location of that level is unclear. If a compilation offers zero degree of assurance and an audit offers 90% assurance that the financial statements are fairly presented, does a review offer the user of the financial statements 20%, 75%, or some other degree of assurance? Different CPAs may believe they are expressing different levels of assurance or one CPA may believe that different levels of assurance exist for different clients in different industries. To assist them in determining the level of assurance they can attach to the customers' financial statements certain users of financial statements, such as bankers, until the level of assurance provided by a review is clarified, may wish to meet with their customers and their customers' CPAs to discuss and evaluate the scope and findings of the CPAs.

If a CPA becomes aware of a departure from generally accepted accounting principles when performing either a compilation, except the omission of substantially all disclosures discussed above, or a review, the departure is to be disclosed in a separate paragraph of his report. Disclosures of uncertainties affecting the financial statements and inconsistencies in the application of accounting principles is optional.

AN AUDIT

CPAs have been notably unsuccessful in persuading the public of the limited responsibilities they intend to assume when performing an audit.

First, they do not guarantee the accuracy of the financial statements. Because of the large volume of transactions in most business enterprises, auditors rely upon tests of the accounting records rather than an examination of all transactions and records. Additionally, even if a transaction is selected for testing, forgeries and other forms of concealment may not be detected by the CPA. Thus, there is always a risk that audited financial statements may not be fairly presented. Although the courts have not always agreed with the position, the profession maintains that even in these latter cases the CPA has met his or her responsibilities if professional standards have been followed.

Second, CPAs also maintain that they are not responsible for detecting fraud, preparing the financial statements, or advising clients on financial or operating matters as part of an audit. CPAs may actually perform some of these functions, but their objective in the performance of an audit is "the expression of an opinion on the fairness with which (the financial statements) present financial position, results of operations, and changes in financial position in conformity with generally accepted accounting principles."[5] In practice, CPAs in auditing small businesses may tend to become more involved in preparing financial statements and advising clients because clients often lack internal financial and accounting expertise, but users of financial statements should not assume that such assistance has been provided.

CONCLUSION

The addition of a form of limited auditor assurance on financial statements that provides more assurance than unaudited financial statements but less assurance than an audit may provide owners of small businesses together with their creditors and auditors an option that could prove to be both useful and cost effective. Many users of financial statements of small businesses will be seeing the new forms for CPA reporting, described above, for the first time in 1980.

REFERENCES

1. American Institute of Certified Public Accountants, Inc., *Statement on Standards for Accounting and Review Services No. 1–Compilation and Review of Financial Statements* (AICPA; December, 1978) p. 3

2. Ibid., p. 8

3. Ibid., p. 3.

4. Ibid., p. 13.

5. *AICPA Professional Standards*, Vol. 1, Commerce Clearing House, Inc., Chicago, AU Section 110.01 (SAS No. 1).

AN EVALUATION OF OUTDOOR RECREATIONIST'S ATTITUDES TOWARD ECONOMIC DEVELOPMENT IN RECREATION AREAS

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INTRODUCTION

The main objective of this article is to explore the attitude of outdoor recreationists in Arkansas toward economic development in recreation areas. Economic development in an outdoor recreational area is usually in the form of restaurants, motels, and service stations. Also other types of business unrelated to outdoor recreation might develop but these would not necessarily be in direct response to the visits by outdoor recreationists. The purpose here is to evaluate the type of economic development which would tend to occur in direct response to outdoor recreation.

SURVEY PROCEDURE

In order to provide data for this evaluation, a survey was conducted in the recreational areas of Arkansas. A questionnaire was distributed at selected sites throughout the state with a primary concern of accessibility by interstate-freeway type highways. Sites readily accessible by interstate-freeway type highways were selected; then, sites with comparable facilities remote to such highways were selected. Sites were widely distributed so that all the interstate-freeway type highways in the state would be included. This pairing technique encompassed state parks, national parks, national forests, Corps of Engineers projects, wild-life refuges, and Game and Fish Commission areas. The distribution of questionnaires began during the Summer of 1977 and concluded during the Fall of 1978. With very minor exceptions, all of the recreation sites were visited twice by the survey person and at different times of the year so that a representative sample sample could be obtained. Survey questionnaires were distributed during the Summer of 1977, the Spring of 1978, the Summer of 1978, and, in selected hunting areas, the Fall of 1978. The total number of questionnaires distributed was 1,750. The questionnaires specifically asked respondents to indicate agreement or disagreement on the area's need for more traveler services. The discussion below is an evaluation of the responses received.

ANALYSIS OF DATA

Exhibit 1 provides comparisons of the importance assigned (1) to access to interstates and (2) to the area itself in site selection for both those who agreed and those who disagreed on the need for more economic development in the area. Both those agreeing and those disagreeing to a need for more traveler services gave importance to the area itself by a large majority. In contrast, 59.0 percent of those agreeing to a need for more traveler services gave importance to access to interstates; but only 34.2 percent of those disagreeing gave importance to access. In conclusion, those placing importance upon access to interstates tend also to agree as to the need for more economic development in the area.

Exhibit 2 supports the conclusion reached above. This exhibit shows, the degree of importance given to various highway characteristics in route choice, by those agreeing and those disagreeing on the need for economic development in the area. The highway characteristics evaluated were: interstate-freeway type highways leading to area, all-weather (secondary) roads leading to area, scenic nature of highway, directness to destination, and availability of traveler services. In all cases, greater importance was indicated by those agreeing on the need for more economic development than was indicated by those disagreeing.

Exhibit 3 provides comparisons of the importance assigned by recreation types to access to an interstate-freeway type highway for both those who agreed and those who disagreed on the need for economic development. In general, greater importance is given to direct access by all recreation types among those agreeing than those disagreeing. Significantly greater importance is given by those agreeing where the type of recreation was camping, boating, skiing and swimming, and visiting historical sites.

Survey responses of agreement or disagreement about the need for more traveler services for each recreation type are summarized in Exhibit 4. The overall data showed that 59.8 percent of those surveyed disagreed on the need for more traveler services while 40.2 percent agreed. A comparison of the outdoor-recreation types indicates that those disagreeing to the greatest degree were those hiking/backpacking, 63.0 percent, and those camping, 61.8 percent. On the other hand, those disagreeing the least were those engaged in picnicing/sightseeing, 56.2 percent. A comparison of these percentages does not indicate a substantial degree of variation among the recreation types as to the agreement concerning need for economic development in recreation areas. The overall comparison essentially tells the story since there were no substantial differences among the recreation types.

Several interesting contrasts were found among the trip and demographic characteristics of those agreeing and those disagreeing on the need for economic development in recreation areas. Exhibit 5, showing the trip characteristics, lists the following trip characteristic observations as tending to disagree more: those whose origin is from other states, those whose destination is in border states, those whose destination is in border states, those having longer duration of trip, those having longer round-trip distances, and those visiting on weekdays.

In contrast, the trip characteristic observations tending to agree to a greater extent concerning a need for economic development in the area were: those whose origin was in-state, those with shorter duration of trip, those whose mode of transportation was auto with no equipment, those with a greater number of persons on trip, those with shorter round-trip distances, and those on weekend visits.

Exhibit 6 provides a similar comparison as to demographic characteristics. Those tending to disagree more were: those over 65 years of age, those with higher levels of formal education, those whose occupation was professional-technical, and those with the highest family income. In contrast, those agreeing to a greater extent tended to be as follows: those under 24 years of age, those who were females, those with less formal education, those whose occupation category was craftsman, and those with the lowest family income.

CONCLUSION

In conclusion, those who place importance upon access tend also to place importance upon economic development in the area. This is certainly a consistent attitude, but the fact remains that the factor of greatest importance to the outdoor recreationist is the area itself. It has been demonstrated that both those agreeing and those disagreeing on the matter of economic development gave high degrees of importance to the area itself in site selection. It was also reported that nearly 60 percent of all those surveyed disagreed as to the need for more traveler services in the area. The conclusion seems to be rather clear that a majority do not desire more economic development in outdoor recreation areas.

Exhibit 1

A COMPARISON OF THE DEGREE OF IMPORTANCE GIVEN TO ACCESS AND TO THE AREA ITSELF IN SITE SELECTION BY THOSE AGREEING AND THOSE DISAGREEING CONCERNING NEED FOR MORE TRAVELER SERVICES

	Disagree				Agree			
Important in Site Selection	Not Important	Little Importance	Important	Great Importance	Not Important	Little Importance	Important	Great Importance
Access to Interstate-freeway Type Highways	33.0%	32.7%	29.2%	5.0%	12.7%	28.2%	44.2%	14.8%
The Area Itself	8.4%	7.4%	19.8%	64.4%	3.4%	6.9%	28.5%	61.3%

Source: Survey conducted by the Authors.

Exhibit 2

A COMPARISON OF THE DEGREE OF IMPORTANCE GIVEN TO SELECTED HIGHWAY CHARACTERISTICS IN ROUTE SELECTION BETWEEN THOSE AGREEING AND THOSE DISAGREEING CONCERNING NEED FOR MORE TRAVELER SERVICES

	Disagree		Agree	
Highway Characteristics	Not Important	Important	Not Important	Important
Interstate-freeway Type Highways Leading to Area	66.5%	33.5%	42.7%	57.3%
All-weather (secondary) Roads Leading to Area	12.0%	88.0%	7.3%	92.7%
Scenic Nature of Highway	18.7%	81.3%	18.1%	81.9%
Directness to Destination	33.5%	66.5%	21.4%	78.6%
Availability of Traveler Services	42.4%	57.6%	15.6%	84.4%

Source: Survey conducted by the Authors.

Exhibit 3

A COMPARISON OF THE DEGREE OF IMPORTANCE GIVEN TO ACCESS BY VARIOUS RECREATION TYPES BY THOSE AGREEING AND THOSE DISAGREEING ON THE NEED FOR MORE TRAVELER SERVICES

	Disagree				Agree			
Recreation Types	Not Important	Little Importance	Important	Great Importance	Not Important	Little Importance	Important	Great Importance
Hiking/Backpacking	41.4%	25.6%	23.8%	9.2%	30.6%	18.8%	32.5%	18.1%
Picnicing/Sightseeing	23.7%	19.3%	32.0%	25.0%	13.2%	14.3%	37.2%	35.4%
Fishing	29.5%	20.2%	25.6%	24.7%	15.3%	15.6%	29.2%	39.8%
Hunting	49.8%	15.2%	16.5%	18.6%	28.7%	16.2%	21.6%	33.5%
Camping	23.6%	17.6%	27.4%	31.4%	9.8%	9.6%	35.4%	45.3%
Boating/Skiing/Swimming	24.9%	19.8%	30.4%	24.9%	12.4%	12.7%	33.3%	41.5%
Visiting Historical Sites or Hobby and Cultural Centers	19.6%	19.8%	32.2%	28.4%	10.3%	11.8%	24.6%	43.3%

Source: Survey conducted by the Authors.

Exhibit 4

DESIRE FOR MORE TRAVELER SERVICES IN RECREATION AREA, PERCENT FOR EACH RECREATION TYPE

	All Types	Hiking Backpacking	Picnicing Sightseeing	Fishing	Hunting	Camping	Boating Skiing Swimming	Visiting Historic Sites
Strongly Disagree	16.9%	17.3%	15.1%	17.9%	18.1%	16.9%	15.0%	14.9%
Disagree	42.9%	45.7%	41.1%	42.5%	39.9%	44.9%	43.0%	43.7%
Agree	28.9%	25.6%	29.6%	26.8%	26.9%	27.3%	28.3%	28.0%
Strongly Agree	11.3%	11.3%	14.2%	12.7%	15.1%	10.9%	13.6%	13.4%

Source: Estimates by the Authors.

Exhibit 5

THE EXTENT OF AGREEMENT THAT AREA NEEDS MORE TRAVELER SERVICES BY SELECTED TRIP CHARACTERISTICS

Trip Characteristics	Predominant Observations		Proportion Indicating	
			Disagree (%)	Agree (%)
Origin of Trip	In-state	(55.9%)	57.0	43.0
	Border-state	(26.8%)	63.2	36.8
	Other-state	(17.3%)	65.8	34.2
Destination of Trip	In-state	(91.0%)	59.7	40.3
	Border-state	(4.1%)	73.3	26.7
	Other-state	(5.0%)	65.2	34.8
Purpose of Trip	Outdoor Rec.	(74.5%)	60.4	39.6
Duration of Trip	No Nights	(17.5%)	53.9	46.1
	1 - 2 Nights	(23.8%)	54.6	45.4
	3 - 5 Nights	(26.0%)	62.3	37.7
	6 - 15 Nights	(24.8%)	62.2	37.8
	16 - More Nights	(7.9%)	71.9	21.1
Mode of Transportation	Auto-No Equip.	(25.2%)	51.2	48.8
	Auto-Equip.	(62.6%)	64.1	35.9
	Motor Home	(8.7%)	58.2	41.8
Number of Persons on Trip	1	(4.6%)	67.9	32.1
	2	(36.8%)	63.0	37.0
	3 - 5	(49.6%)	59.1	40.9
	6 - more	(9.0%)	47.7	52.3
Round Trip Distance	Up to 200 Miles	(45.9%)	56.0	44.0
	200 - 399 Miles	(14.9%)	60.9	39.1
	400 - 599 Miles	(10.3%)	58.1	41.9
	600 - 799 Miles	(5.1%)	55.4	44.6
	800 - 999 Miles	(5.0%)	64.6	35.4
	1,000 - 1,999 Miles	(10.9%)	68.5	31.5
	2,000 - over	(7.9%)	73.0	27.0
Primary Type of Lodging	None	(18.6%)	56.1	43.9
	Camping	(72.1%)	62.2	37.8
Previous Visitor	Yes	(66.1%)	59.0	41.0
	No	(33.9%)	62.0	38.0
Time of Visit	Weekend	(49.6%)	56.4	43.6
	Weekend	(50.4%)	63.1	36.9

---

*Percent of all surveyed having this specific trip characteristic observation.

Source: Survey conducted by the Authors.

Exhibit 6

THE EXTENT OF AGREEMENT THAT AREA NEEDS MORE TRAVELER SERVICES BY SELECTED DEMOGRAPHIC CHARACTERISTICS

Trip Characteristics	Predominant Observations		Proportion Indicating	
			Disagree (%)	Agree (%)
Household Head	Yes	(78.4%)*	60.0	40.0
	No	(21.6%)	58.0	42.0
Age	Under 18	(3.4%)	55.2	44.8
	18 - 24	(10.8%)	50.0	50.0
	25 - 34	(25.8%)	62.3	37.7
	35 - 44	(24.2%)	61.4	38.6
	45 - 54	(17.2%)	58.8	41.2
	55 - 64	(10.9%)	61.8	38.2
	65 and over	(7.7%)	63.6	36.4
Sex	Male	(74.4%)	61.7	38.3
	Female	(25.6%)	54.6	45.4
Race	White	(98.5%)	60.0	40.0
Education	Grade School	(4.6%)	48.1	51.9
	High School	(49.9%)	55.9	44.1
	Post HS-College	(45.4%)	65.7	34.3
Occupation	Prof-Tec	(33.8%)	66.7	33.3
	Farm	(9.4%)	56.3	43.7
	Craft	(18.5%)	54.2	45.8
	Self-Emp.	(10.2%)	58.7	41.3
	Retired	(13.5%)	62.2	37.8
Income	Under $5,000	(3.9%)	47.6	52.4
	$5,000 - $7,499	(6.8%)	58.0	42.0
	$7,500 - $9,999	(12.5%)	52.9	47.1
	$10,000 - $14,999	(25.2%)	60.3	39.7
	$15,000 - $19,999	(23.0%)	57.1	42.9
	$20,000 - $29,999	(19.0%)	71.1	28.9
	$30,000 - over	(9.6%)	62.3	37.7

*Percent of all surveyed having this specific demographic characteristic observation.

Source: Survey conducted by the Authors.

CONTROLLING MAINTENANCE INVENTORY

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INTRODUCTION

Although maintenance inventory consists of the smaller portion of the total inventory value, it nevertheless deserves consideration. Some attention has been given as there has been continued growth in the awareness of the importance of maintenance inventory by management. The primary reason for this awareness is the role that maintenance inventory plays in total maintenance costs.

PROBLEM RECOGNITION

In 1955, the National Association of Accountants presented two reasons as being responsible for the growth of interest by management in the maintenance area:

(1) The increased use of mechanical equipment and the resulting need for maintenance has increased maintenance cost to the point where it has become large enough to warrant special treatment.

(2) Increased competition, in the sense that every company has become acutely conscious of the need of reducing operating costs overall if a competitive position in the industry is to be maintained, coupled with high downtime costs, necessitates more attention to maintenance costs.[1]

If, indeed, the maintenance area was of concern then, it is of even more concern today. The trend toward a capital intensive economy has continued. Almost twenty years later, comments can be found indicating that the use of mechanical equipment is still on the rise. One writer states:

> Production processes have become more complex. The constant search for lower unit costs has led to larger organizations and more intricate machines, more continuous cycles relying less and less on manual labour. Science has created new industries and intensified production in the older ones.[2]

Additional comments can also be found relating to the importance of downtime. In an economy such as ours where the competitive edge continues to narrow, downtime can place a firm in an unprofitable position. As one author states, "A profitable manufacturing process demands continuity of operation."[3] Whenever equipment is down, the production process is disrupted.

Another author noted ". . . that mechanical troubles were taking six percent of the total running (scheduled) time."[4] If a firm is to remain competitive, downtime must be minimized.

MAINTENANCE COSTS

General

Hand in hand with increased activity in the maintenance function is, naturally, increased maintenance cost. It has been noted that maintenance expenditures now represent about 6% of the cost of goods sold.[5]

In 1976, concern was again expressed for the need to control maintenance operations:

Maintenance managers must recognize that today's maintenance operations offer an immediate opportunity for improving company profits. Savings can be realized quickly with a minimum investment of time and money. And the key is better maintenance cost control.[6]

> Maintenance cost is an ever present expense and must be controlled in order to improve service and profits.
>
> [While] it is true that it is impossible to eliminate these operating losses completely, . . . A 30 to 40 percent improvement would not be an unlikely expectancy. . . .[7]

Despite the emphasis on and the need for maintenance control, little has been done. The percent of expenses which is related to maintenance continues to soar; however, as one author notes:

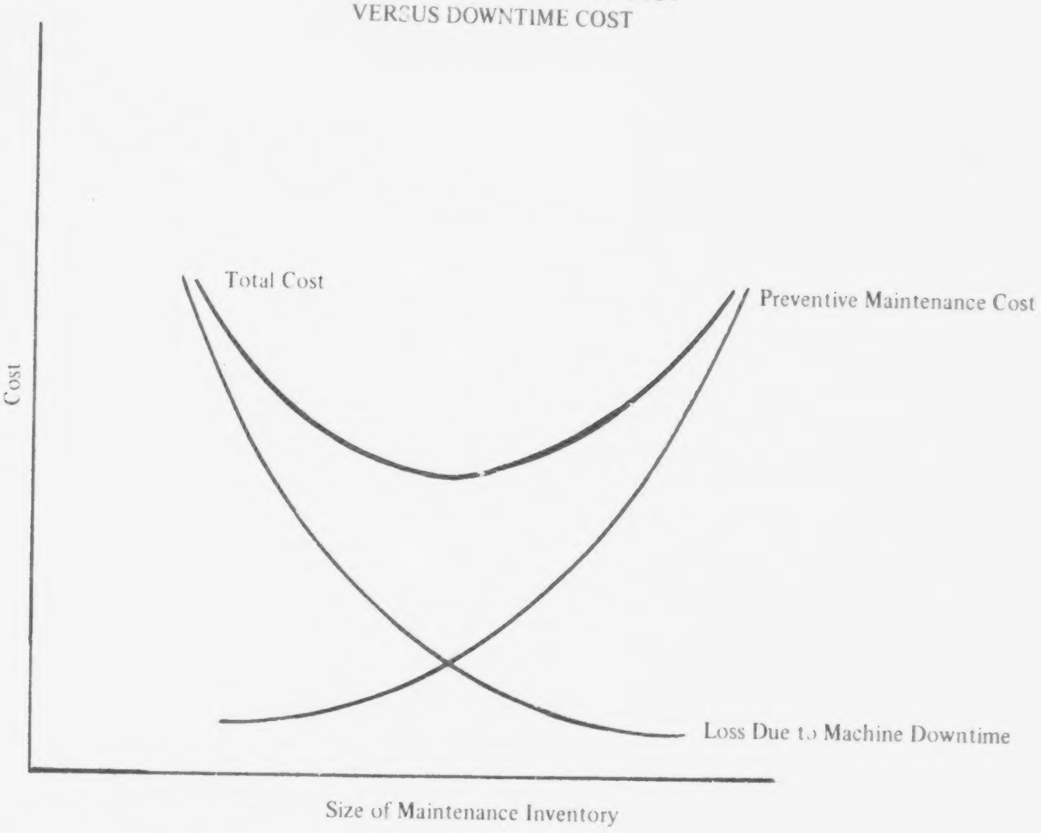
> . . . Not many managements [sic] fully recognize the impact of this cost shift, and despite the large dollar amounts involved, surprisingly little control is being applied to the maintenance function.[8]

Part of the reason for management's lack of action is that its primary concern is production. The problem has been that "Maintenance has been dominated by production needs instead of being subject to them."[9] Expressed another way, "The maintenance department is still regarded as a service department and not as an engineering company with [substantial] sales. . . ."[10]

In essence, the objective of management is to establish a balance between the cost of maintenance and the cost of downtime. As preventive maintenance increases, the loss due to machine downtime should decrease. However, the maintenance cost to insure continuous operations could be substantially larger than the cost which would be incurred if operations were interrupted. Thus, management should provide a system whereby the total of the cost of preventive maintenance and of the loss due to downtime is minimized. This condition is represented in Figure 1 where (1) Preventive Maintenance Cost, (2) Loss due to Machine Downtime, and (3) Total Maintenance Cost are plotted as functions of Total Maintenance Inventory. The intersection of the curves (1) and (2) indicates the Size of Maintenance Inventory at which Total Maintenance Cost is at a minimum.

Figrue 1

PREVENTIVE MAINTENANCE COST
VERSUS DOWNTIME COST



The preventive maintenance cost consists of costs related to the size of maintenance crews and the materials and supplies required to administer an effective program. As such, control of maintenance materials and supplies should be one of the objectives of management.

Maintenance Inventory

Although maintenance cost has been recognized, as indicated by the preceding passages, the progress made thus far in regard to maintenance inventory has been unsatisfactory. In 1963, two authors expressed the need for investigating maintenance inventory:

> The usual emphasis in inventory control is on optimizing operating inventories–raw materials, goods in process, and finished goods–which is understandable since these categories compose the bulk of inventory accounts. However, another kind of inventory that may be profitably investigated is the maintenance inventory; although a small part of the total stocks, it involves a substantial investment in some firms.[11]

The need for further study of maintenance inventory is expressed again eight years later. The author stated:

> Maintenance has been viewed as a necessary evil of doing business and the associated cost has always been accepted without challenge. Such a disinterested and uncertain attitude toward maintenance cost and its effectiveness would then spread throughout the maintenance organization. Because of this attitude very few companies bring to bear the necessary resources to control this portion of manufacturing costs.[12]

Another reason for the increased interest in maintenance inventory is the high cost of money. In a recent study, 75 percent of the individuals interviewed indicated the need for lower inventory levels of items required for maintenance only because of high interest cost.[13] Complicating the problem of high interest cost is the higher cost of maintenance materials which have increased approximately 75 percent over the past three to five years.[14]

Obsolescence

To date, most of the literature relating to maintenance cost has focused on preventive maintenance and methods of controlling manpower; but there has been little recognition of the cost of materials and practically none regarding obsolete materials. Regarding obsolescence, one author states:

> Because of the nature of today's rapidly changing technology and increased competition, it is imperative that companies recognize and adopt procedures to adequately determine and control inventory obsolescence.[15]

Spare parts for production equipment are items which generally require more attention because the parts can become obsolete when equipment is replaced or modified.[16]

In another article, the components of inventory carrying cost are presented in Figure 2 as constituting 25% per year of the total inventory value. Obsolescence is attributed the largest component cost representing 10% of the total inventory value. The size of the problem is illustrated by referring to Exxon Corporation's 1978 Annual Report in which materials and supplies are reported at $570,030,000. Thus, the cost of obsolescence in this case would be estimated at around $57,003,000 annually. Another important fact revealed in that annual report is the $91,342,000 increase in materials and supplies over the amount reported in 1977.

Mr. W.J. Jamieson, Superintendent, Maintenance and Utilities Finishing Works, of The Steel Company of Canada, Ltd. states:

> . . . Investigation in most shops will reveal that maintenance stores are overstocked with wrong amounts of stock and often with the wrong stock, and thousands of dollars can be saved by a managed inventory approach. A typical example is where maintenance stores carry thousands of dollars of inventory in bearings, although four blocks away there is a bearing supplier advertising twenty-four hour service; on the other hand, a vital hydraulic value with an eight-week delivery is not stocked at all.[17]

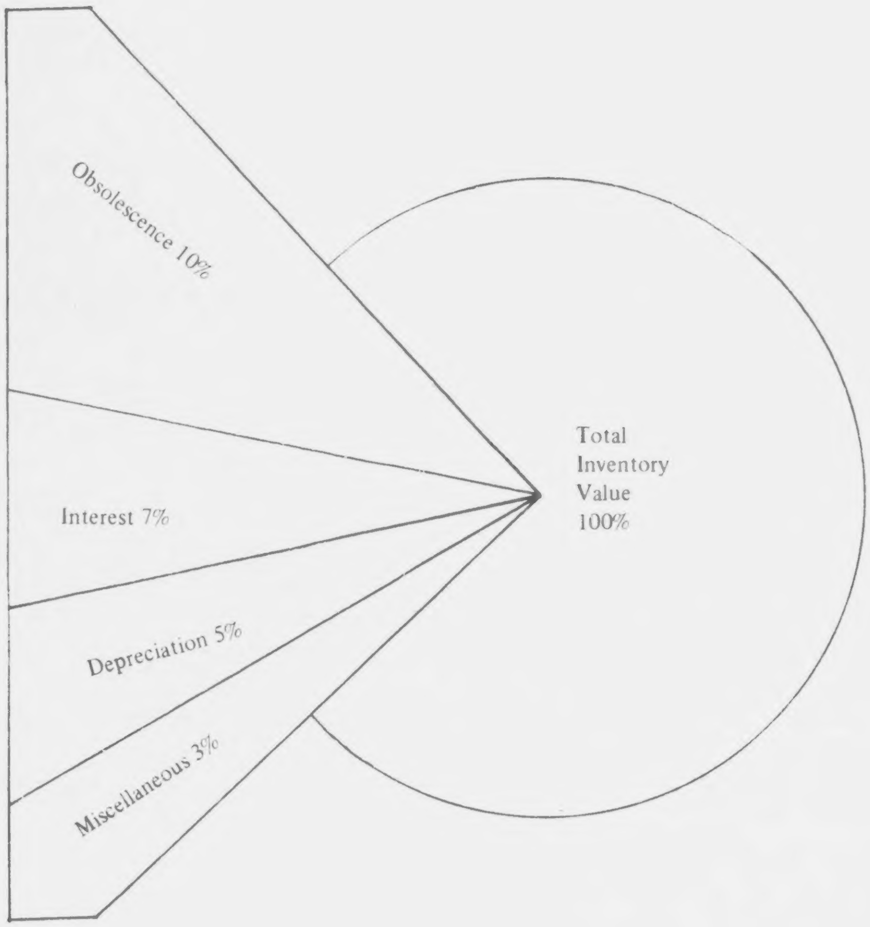
The value of the parts themselves is only a portion of the additional cost to the firm. For instance, the excess cost of handling unnecessary parts can at times be quite substantial. For example, in 1969, the Army stocked large inventories of vehicle repair parts at Frankfort, Germany. These were in addition to stocks of the same parts at various other centers. After the inventory in Frankfort was realized to be unnecessary and was eliminated, a savings of $475,000 resulted–principally in salaries.[18]

CONCLUSIONS

Information regarding obsolete maintenance inventory should be of great value to many firms who either haven't, as yet, had the time to scrutinize this area or have let production problems overshadow the need. The requirement for management to review its maintenance program is urgent. Costs which are readily avoidable are needlessly accumulating. Maintenance inventory can and should be controlled.

Figure 2

COMPONENTS OF INVENTORY CARRYING COSTS



Source: William R. Burke, "Control Maintenance Inventory Costs," *Computer Decisions,* (February, 1973), p. 14.

FOOTNOTES

[1] *Accounting Practice Report 2,* "Planning, Controlling and Accounting for Maintenance," (New York: National Association of Accountants, 1955), p. 27.

[2] R.P. Reynolds, "Helping the Engineer Get the Best Value from Maintenance Expenditures," *Management Accounting,* (December, 1974), p. 329.

[3] H.A. Deery and L. Laurinovics, "How Stores Inventory Control Aids Maintenance Management," *Pulp and Paper,* May, 1974, p. 94.

[4] Lewis R. Zeyher, *Zeyher's New Guide to Cost Control,* (Englewood Cliffs, N.J.: Prentice-Hall, 1977), p. 89.

[5] "Old Image Dying . . . Maintenance Has Added Cost," *Industry Week,* May 12, 1975, p. 11.

[6] Frank E. Haarhoff, "Maintenance Cost Control–Crucial Role in Profit Game," *Factory,* November 1976, p. 35.

[7] Zeyher, op. cit., p. 89.

[8] Edward J. Rand, "Managing Maintenance: How to Control Runaway Cost," *Management Review,* June 1978, p. 59.

[9] Reynolds, op. cit., p. 329.

[10] Ibid.

[11] W.B. Hirschmann and J.R. Brauweiler, "Curing and Preventing Surplus Inventories," *Business Horizons,* (Spring, 1963), p. 88.

[12] Joseph M. Cozzolino, "Maintenance Cost Controls," *Management Accounting,* LII (February, 1971), 40.

[13] Ann Eggleston, "The Maintenance Marketplace," *Purchasing,* April 15, 1975, p. 36.

[14] Rand, op. cit., p. 60.

[15] Fredric Blank, "The Not-So-Obsolete Problem of Inventory Obsolescence–Determination and Accounting," *The New York Public Accountant,* (January, 1966), p. 33.

[16] George Bartholomew, "How to Maintain Practically Everything," *College and University Business,* May 1973, p. 44.

[17] H.B. Maynard, *Handbook of Modern Manufacturing Management,* Chapter 6 (New York: McGraw-Hill Book Company, 1970), p. 8.

[18] *Appendix to the Annual Report of the Comptroller General of the United States* (Washington, D.C.: U.S. Government Printing Office, 1971), p. 123.

GOLD MANIA: A PERSPECTIVE

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Of all the spectacular and bizarre events of recent months, not one has surpassed the drama of the sky-rocketing increase in the price of gold. From a price of $382 per ounce at the end of October, 1979, the price zoomed to $875 per ounce before profit-taking forced a retrenchment. Across the industrialized world, ordinary citizens joined in the act by buying their own gold stocks or by selling family heirlooms with gold content. A recent newspaper story chronicled a mugging in which the victim's wallet was ignored while his gold teeth were painfully extracted.

The obsession with gold is certainly not new in the world. Gold has enthralled man since the dawn of civilization. The particular luster and rarity of gold gave it a mystical quality in virtually all ancient civilizations. The quest for gold has changed the course of history, opened up new worlds, caused mass movements of people, and shifted national boundaries. Gold has been the most common form of money in history; not because it has special, mystical characteristics, but because it has the qualities necessary for a good commodity money. It is durable, divisible, portable, easy to distinguish, relatively scarce–characteristics not shared by other commodity moneys such as cattle, fish, whiskey, stone wheels, or tobacco. However, modern industrial societies find gold no longer convenient or efficient and have turned to paper currency and, more important, demand deposits. As a rule, nations now keep gold only for payments to each other, but the controversy over the monetary role of gold has been fierce.

John Maynard Keynes, the most influential twentieth century economist, labeled gold a "barbarious metal." Nikolai Lenin foresaw that socialism would reduce the value of gold so that it would be used "to coat the walls and floors of public lavatories." French President and hero Charles de Gaulle championed the metal by stating, "There can be no other criterion, no other standard than gold. Yes, gold, which never changes, which has no nationality, and which is eternally and universally accepted as the unalterable fiduciary value par excellence." Former Federal Reserve Board Chairman, William McChesney Martin made perhaps the most accurate observation of all. "Gold is a beautiful and noble metal," he said. "What is barbarious, when it occurs, is man's enslavement to gold for monetary purposes."[1]

Because gold has been largely demonetized, at least domestically, economists tend to dismiss the price gyrations as interesting but rather inconsequential. However, the effects may be greater than we think. The rising price of gold is inflationary for a number of reasons. As the price of gold climbs, individuals and governments with gold stocks see their wealth increasing and increase spending accordingly. Governments are able to finance growing balance-of-payments deficits and, therefore, postpone adjustments to problems of energy conservation and to productivity declines. Speculation in gold tends to spill-over to other commodities, and the prices of silver and copper are bid up. Alan Greenspan has estimated that recent gold prices will add .4% to the CPI.[2]

Perhaps more serious is the possibility that gold price increases are driving up the price of oil. OPEC money-men suspect that there is a conspiracy to manipulate the price of gold in order to diminish the purchase price of oil. OPEC, in order to protect their terms of trade, may continue to raise oil prices and may link future oil prices to gold. Whether the conspiracy is real or imaginary, oil prices may reflect the phenomenal gold price increase. Ironically, Arab purchases of gold, in an effort to find a more stable reserve, may be what is doing most to drive up the price of gold. Conspiracy or not, the value of the United State's gold reserves increased by more than $120 billion between January, 1979,and January, 1980.[3]

Political as well as economic balance is affected by gold prices. The world's leading gold producing countries are the Union of South Africa and the Soviet Union, neither of which will win popularity polls in the world community. South Africa's sudden wealth will make her even more immune to world pressure toward ameliorating apartheid policies. Moreover, gold's price gains are providing the Soviet Union with the means to withstand sanctions imposed in the wake of the Afghanistan invasion. With the added foreign exchange, the Soviets can outbid other countries for grain in the world market and also cover losses if the Olympics are cancelled.

Mark Twain once said on reading his obituary in the newspaper that "the report of my death has been greatly exaggerated." So too it seems that despite efforts to lessen its impact, gold will likely continue to play an important role in world affairs.

FOOTNOTES

[1] *Key to the Gold Vault,* Federal Reserve Bank of New York, p. 10.

[2] "The Economic Consequences of the Gold Boom," *Business Week,* February 11, 1980, p. 86.

[3] Ibid., p. 83.

RETAIL TRADE OF ARKANSAS BY COUNTY, 1972-1977

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INTRODUCTION

The data in Table 1 reflect the changes, both absolute and percentage, in number of retail trade establishments and in retail sales in Arkansas and its counties for the years 1972 and 1977. During the period, the number of establishments have decreased but retail sales have increased both in current dollars and in 1972 constant dollars.

RETAIL TRADE ESTABLISHMENTS

During the period 1972 through 1977, Arkansas experienced a decline in total number of retail trade establishments from 22,118 to 21,779. Losses in the number of establishments occurred in 46 of Arkansas' 75 counties during the period. Of those 46 counties which showed declines, Miller and Jefferson Counties realized the highest, 96 establishments, and the next highest, 89 establishments, losses, respectively.

Only 28 counties in Arkansas experienced an increase in the number of retail trade establishments during the period. Within this group, Washington County had the highest gain with 145 establishments, and was followed by Craighead and Baxter Counties with 67 and 48 establishments, respectively. The net loss for the State during the 1972-1977 period was 339 establishments or 1.53 percent.

RETAIL SALES

Arkansas' total retail sales in current dollars increased 63.14 percent from $3.912 billion in 1972 to $6.382 billion in 1977. But with inflation accounting for 31 percent of the apparent $6.38 billion total retail sales in 1977, the value of those sales in 1972 constant dollars using the Consumer Price Index[1] falls to $4.41 billion. Thus, the real gain over 1972 sales was only $494 million or 12.62 percent.

Of the 75 counties only one, Scott, suffered a loss, $2.52 million or 15.39 percent, in current dollar retail sales during the period. However, after discounting the inflation effect, only 56 of the 75 counties experienced real gains in their total retail sales during the same period. Counties actually experienced losses in real terms if their retail sales in current dollars increased over the period by less than 44.85 percent. For instance, the retail sales in Bradley County during the period increased by $8.7 million or 39.35 percent in current dollars but declined by $0.83 million or 3.79 percent in real terms. Note, however, that the retail sales for 1972 included local and State sales taxes; whereas, the 1977 sales excluded them. Hence, the small decline in retail sales in seven counties, Ashley; Crittenden; Jackson; Little River; Mississippi; Ouachita; and Poinsett, may reflect only the tax difference and may, in fact, not be a decline.

Table 1

ARKANSAS RETAIL TRADE, BY COUNTY, 1972 – 1977

Unit	Establishments				Retail Sales (in $1,000)				
			Change from 1972		Current Dollars			Constant Dollars (1972 = Base Year)	
	1972[1]	1977[1]	Number	%	1972[1]	1977[1]	% Change from 1972[2]	1977[2]	% Change from 1972[2]
State of Arkansas, Total	22,118	21,779	- 339	- 1.53	3,912,255	6,382,258	63.14	4,406,115	12.62
County:									
Arkansas	309	311	2	0.65	46,142	75,577	63.79	52,176	13.08
Ashley	247	208	- 39	- 15.79	40,639	58,749	44.56	40,559	- 0.20
Baxter	283	331	48	16.96	37,979	71,408	88.02	49,298	29.80
Benton	673	665	- 8	- 1.19	108,412	180,450	66.45	124,577	14.91
Boone	272	314	42	15.44	52,443	97,927	86.73	67,606	28.91
Bradley	125	116	- 9	- 7.20	22,137	30,848	39.35	21,297	- 3.79
Calhoun	49	45	- 4	- 8.16	4,022	6,579	63.58	4,542	12.93
Carroll	203	231	28	13.79	21,519	34,375	59.74	23,731	10.28
Chicot	227	195	- 32	- 14.10	26,360	34,457	30.72	23,788	- 9.76
Clark	263	230	- 33	- 12.55	43,840	75,043	71.17	51,807	18.17
Clay	264	246	- 18	- 6.82	25,127	33,822	34.60	23,350	- 7.07
Cleburne	167	198	31	18.56	25,933	37,980	46.45	26,220	1.11
Cleveland	47	44	- 3	- 6.38	3,316	4,215	27.11	2,910	- 12.24
Columbia	297	262	- 35	- 11.78	41,692	64,016	53.55	44,195	6.00
Conway	217	207	- 10	- 4.61	36,168	53,009	46.56	36,596	1.18
Craighead	635	702	67	10.55	117,825	227,399	93.00	156,989	33.24
Crawford	253	257	4	1.58	40,983	76,137	85.78	52,563	28.26
Crittenden	439	418	- 21	- 4.78	112,802	160,667	42.43	110.920	- 1.67
Cross	191	193	2	1.05	28,873	48,038	66.38	33,164	14.86
Dallas	142	135	- 7	- 4.93	18,658	29,878	60.14	20,627	10.55
Desha	234	200	- 34	- 14.53	46,782	52,307	11.81	36,111	- 22.81
Drew	157	163	6	3.82	25,696	42,579	69.59	30,086	17.08
Faulkner	348	374	26	7.47	59,576	108,529	82.17	74,925	25.76
Franklin	130	107	- 23	- 17.69	15,730	24,871	58.11	17,170	9.15
Fulton	89	102	13	14.61	7,656	12,557	64.02	8.669	13.23
Garland	804	787	- 17	- 2.11	148,885	229,427	54.10	158,389	6.38
Grant	107	110	3	2.80	13,163	23,667	79.80	16,339	24.13
Greene	339	335	- 4	- 1.18	49,078	31,656	66.38	56.373	14.86
Hempstead	195	183	- 12	- 6.15	31,842	47,615	49.54	32,872	3.23
Hot Spring	255	237	- 18	- 7.06	39,891	59,413	48.94	41,017	2.82
Howard	167	151	- 16	- 9.58	25,017	37,066	48.16	25,589	2.29
Independence	326	309	- 17	- 5.21	47,105	84,840	80.11	58,571	24.34
Izard	113	101	- 12	- 10.62	10,773	17,119	58.91	11,818	9.70
Jackson	264	244	- 20	- 7.58	41,420	58,163	40.42	40,154	- 3.06
Jefferson	861	772	- 89	- 10.34	167,618	273,075	62.92	188,523	12.47
Johnson	136	149	13	9.56	20,262	39,688	95.87	27,399	35.22
Lafayette	111	99	- 12	- 10.81	11,528	12,663	9.85	8,742	- 24.17
Lawrence	199	188	- 11	- 5.53	23,496	41,890	78.29	28,920	23.08

Table 1 (continued)

ARKANSAS RETAIL TRADE, BY COUNTY, 1972 – 1977

	Establishments				Retail Sales (in $1,000)				
			Change from 1972		Current Dollars			Constant Dollars (1972 = Base Year)	
Unit	1972[1]	1977[1]	Number	%	1972[1]	1977[1]	% Change from 1972[2]	1977[2]	% Change from 1972[2]
County:									
Lee	133	122	- 11	- 8.27	19.098	24,138	26.39	16,664	- 12.74
Lincoln	83	89	6	7.23	9,550	14,098	47.62	9,733	1.92
Little River	133	112	- 21	- 15.79	18,009	25,776	43.13	17,795	- 1.19
Logan	194	173	- 21	- 10.82	31,386	48.060	53.13	33,179	5.71
Lonoke	279	272	- 7	- 2.51	39,388	70,424	78.80	48,619	23.44
Madison	99	88	- 11	- 11.11	9,479	17,459	84.19	12,053	27.15
Marion	88	90	2	2.27	7,773	13,989	79.97	9,658	24.25
Miller	459	363	- 96	- 20.92	69,365	107,910	55.57	74,498	7.40
Mississippi	584	569	- 15	- 2.57	112,751	162,927	44.50	112,480	- 0.24
Monroe	206	181	- 25	- 12.14	23,179	39,330	69.68	27,152	17.14
Montgomery	68	77	9	13.24	4,986	8,719	74.87	6,019	20.72
Nevada	113	105	- 8	- 7.08	17,205	22,085	28.36	15,247	11.38
Newton	45	45	0	- 0.00	2,952	3,907	32.35	2,697	- 8.64
Ouachita	356	310	- 46	- 12.92	55,733	80,532	44.50	55,597	- 0.24
Perry	55	47	- 8	- 14.55	3,449	4,370	26.70	3,017	- 12.53
Phillips	384	359	- 25	- 6.51	56,910	88,149	54.89	60,855	6.93
Pike	126	135	9	7.14	17,339	27.674	59.61	19,105	10.19
Poinsett	355	344	- 11	- 3.10	41,287	59,087	43.11	40,792	- 1.20
Polk	178	166	- 12	- 6.74	24,414	38,604	58.12	26,651	9.16
Pope	342	362	20	5.85	62,607	123,112	96.64	84,993	35.76
Prairie	129	106	- 23	- 17.83	15,875	24,022	51.32	16,584	4.47
Pulaski	2,898	2,924	26	0.90	805,798	1,325,501	64.50	915,085	13.56
Randolph	135	147	12	8.89	18,590	31,832	71.23	21,976	18.21
St. Francis	323	315	- 8	- 2.48	52,649	86,023	63.39	59,388	12.80
Saline	300	304	4	1.33	57,134	105,518	84.69	72,846	27.50
Scott	145	79	- 66	- 45.52	16,375	13,855	- 15.39	9,565	- 41.59
Searcy	100	102	2	2.00	10,285	15,242	48.20	10,523	2.31
Sebastian	1,029	1,091	62	6.03	225,904	396,062	75.32	273,429	21.04
Sevier	144	154	10	6.94	22,616	36,259	60.32	25,032	10.68
Sharp	129	172	43	33.33	10,671	27,473	157.45	18,967	77.74
Stone	85	93	8	9.41	8.596	17,746	106.44	12,251	42.52
Union	550	525	- 25	- 4.55	96,386	147,299	52.82	101,691	5.50
Van Buren	96	124	28	29.17	10,653	20,495	92.39	14,149	32.82
Washington	783	928	145	18.52	184,308	322,172	74.80	222,418	20.68
White	513	504	- 9	- 1.75	76,287	134,581	76.41	92,911	21.79
Woodruff	165	128	- 37	- 22.42	11,690	20,735	77.37	14,315	22.46
Yell	176	155	- 21	- 11.93	21,190	29,394	38.72	20,293	- 4.23

Source: [1] U.S. Department of Commerce, Bureau of the Census, *Census of Retail Trade, Arkansas, 1972 and 1977,* Washington, D.C.

[2] Author's computation.

Of 56 counties, 34 experienced a higher retail sales growth rate in real terms than the State average of 12.62 percent. Figure 1 shows each county by one of three rates of real growth. With respect to the increase in constant dollar retail sales, the gain in Sharp County was the highest of the relative values at 77.74 percent while that in Pulaski County was the largest of the absolute values at $109.29 million.

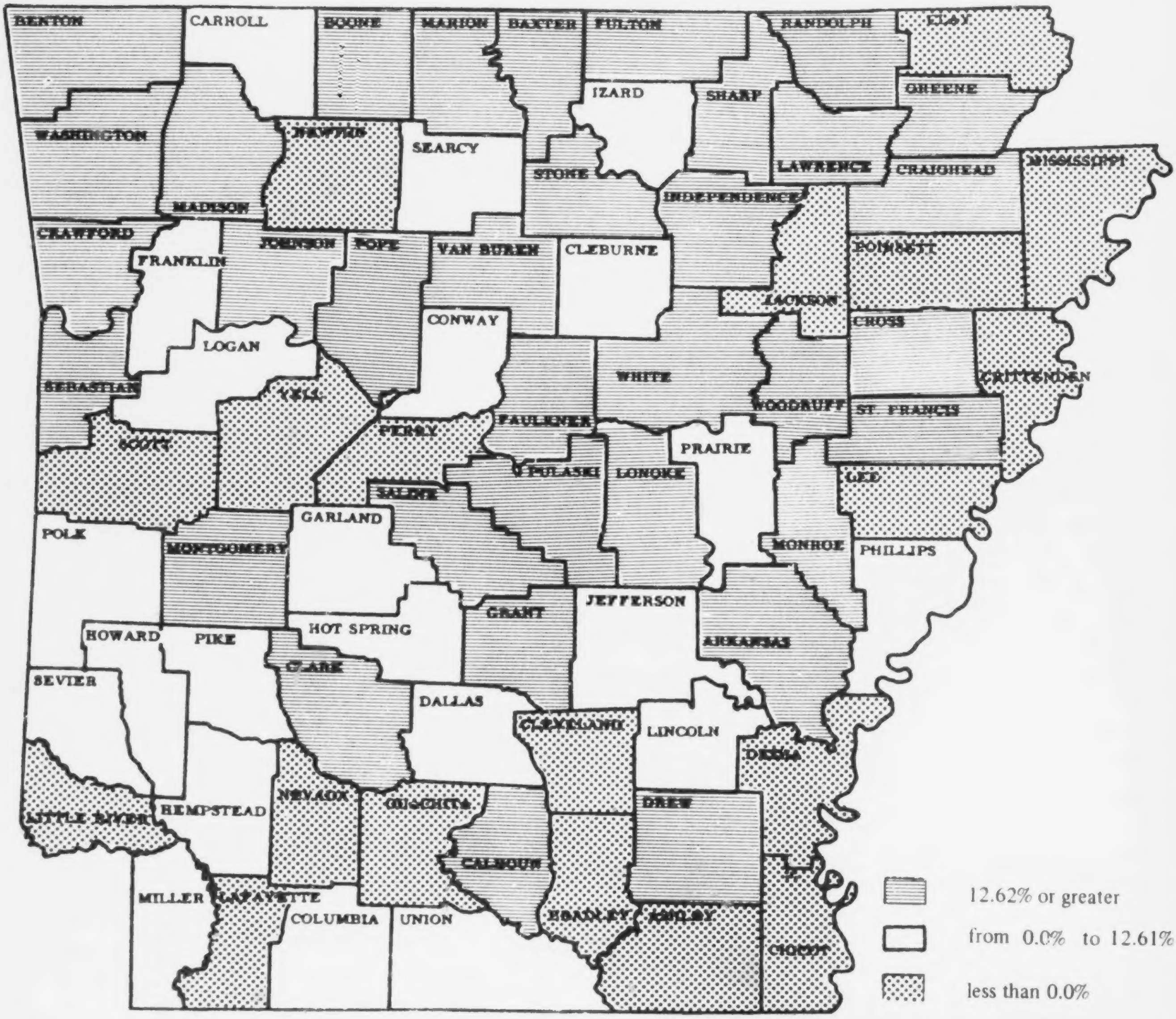
FOOTNOTES

[1] The CPI (1967=100) for 1972 and 1977 is 125.3 and 181.5 respectively. The adjusted CPI (1972=100) for 1977 is 181.5÷125.3=144.85.

Figure 1

RETAIL SALES GROWTH, 1972-1977

(in 1972 Dollars)


BENTON
CARROLL
BOONE
MARION
BAXTER
FULTON
RANDOLPH
CLAY
WASHINGTON
MADISON
NEWTON
SEARCY
IZARD
SHARP
STONE
LAWRENCE
GREENE
CRAIGHEAD
MISSISSIPPI
INDEPENDENCE
CRAWFORD
FRANKLIN
JOHNSON
POPE
VAN BUREN
CLEBURNE
POINSETT
JACKSON
CONWAY
CROSS
LOGAN
SEBASTIAN
YELL
WHITE
WOODRUFF
ST. FRANCIS
CRITTENDEN
SCOTT
PERRY
FAULKNER
PULASKI
LONOKE
PRAIRIE
LEE
SALINE
GARLAND
POLK
MONTGOMERY
MONROE
PHILLIPS
JEFFERSON
GRANT
HOT SPRING
HOWARD
PIKE
ARKANSAS
CLARK
SEVIER
DALLAS
CLEVELAND
LINCOLN
DESHA
LITTLE RIVER
HEMPSTEAD
NEVADA
OUACHITA
DREW
CALHOUN
MILLER
LAFAYETTE
COLUMBIA
UNION
BRADLEY
ASHLEY
CHICOT
12.62% or greater
from 0.0% to 12.61%
less than 0.0%

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SELECTED ARKANSAS AND U.S. ECONOMIC INDICATORS

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Arkansas Economy: Quarter IV and the Year, 1979	*32*
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ARKANSAS ECONOMY: QUARTER IV AND THE YEAR, 1979

Phillip H. Taylor
Director, Bureau of Business and
Economic Research
University of Arkansas, Fayetteville

As previously forecasted, personal income exceeded $14.8 billion in 1979. Personal income in the fourth quarter flowed at an annual rate of $15.7 billion, or 14.9 percent ahead of the same quarter a year earlier. The annual total of $14.861 billion marked a growth of 13.9 percent over the 1978 figure and indicates that, in the aggregate, personal incomes grew in real, as well as nominal, terms during the year.

Employment in Arkansas, seasonally adjusted, declined 2.1 percent. However, the average for the year increased over the 1978 level by 25,600 workers. Preliminary data indicate that employment in early 1980 will exceed that of the first quarter of 1979 but that the unemployment rates for the two periods will be fairly similar.

Seasonally adjusted value added by manufacture declined again in the last quarter of the year. For that period it was 3.8 percent below its peak and only 0.3 percent ahead of Quarter IV, 1978.

Nonresidential construction continued to exceed its 1978 performance levels and for the year registered an increase of almost $90 million. Those increases may be partially weather-related but they also reflect the large backlog of business investment expenditures that existed throughout the latter part of 1979. As the economy moves into 1980, this backlog should diminish and nonresidential construction activity is expected to slow rather sharply in 1980.

Residential construction declined almost 33 percent in the last quarter of the year and the annual total was $215 million below that in 1978 and $27 million below the 1977 figure. Since these data are in nominal dollar terms, the real level of activity in the residential construction industry was well below that of 1977.

Tonnage moved in Arkansas River commerce increased in the last quarter of 1979 but the total tonnage for the year finished well behind the volumes reported in 1977 and 1978. For the year, the decline was largely due to lower amounts of internal and inbound tonnages.

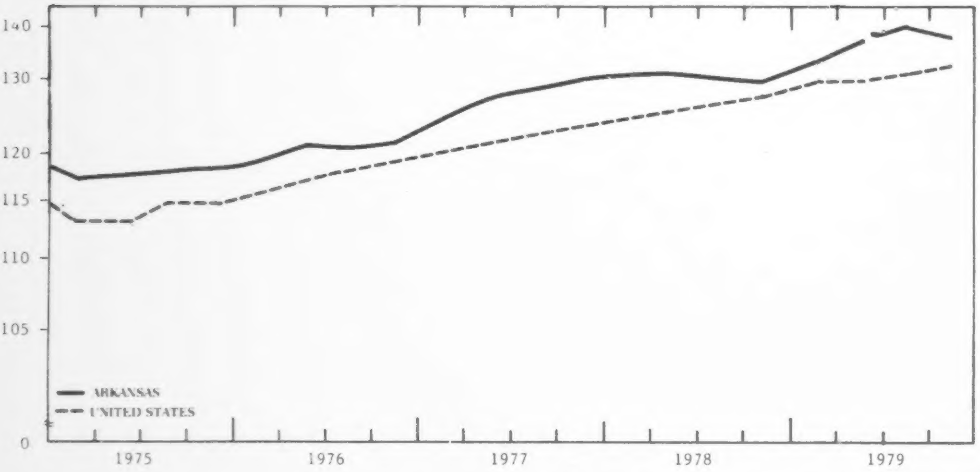
Net new savings in savings and loan associations rose slightly in the last quarter of the year but new loans declined by more than 28 percent. The rising rates of interest for home mortgage loans experienced in recent months should further diminish the level of new loans throughout much of 1980.

Data on Farm Cash Receipts released earlier by the U.S. Department of Agriculture have been subject to substantial revisions. However, these revisions did not alter the fact that 1979, from the standpoint of cash receipts, was an excellent year for agriculture. In the last two years, cash receipts have grown by over 30 percent. While 1980 is also expected to be a good year, improvement over 1979 will probably be relatively moderate.

In summary, Arkansas' economic performance in 1979 was somewhat mixed with some industries turning down but with the overall performance positive. Nevertheless, high levels of interest, tight money, the possibility of a cutback in Federal spending, and the likelihood that consumers are nearing the end of their ability to continue present spending levels—all reinforce the possibility that the much predicted recession will materialize in 1980. Even with a recession, there is a strong probability that inflation will persist at a double-digit rate during the year.

INDEX OF TOTAL EMPLOYMENT, ARKANSAS AND UNITED STATES

Quarterly data, seasonally adjusted, 1967 = 100



(Semi-logarithmic scale: equal slopes indicate equal rates of change)

Base Year to Date and Quarterly Changes in Total Employment

Seasonally adjusted, percent

	1967 to 1979 Q-IV	1978 Q-IV to 1979 Q-I	1979 Q-I to 1979 Q-II	1979 Q-II to 1979 Q-III	1979 Q-III to 1979 Q-IV
Arkansas	+ 37.1	+ 2.4	+ 3.3	+ 1.5	- 2.1
United States	+ 31.3	+ 1.0	+ 0.2	+ 0.8	+ 0.5

EMPLOYMENT BY MAJOR INDUSTRY GROUP IN ARKANSAS, AND UNEMPLOYMENT RATE, ARKANSAS AND UNITED STATES

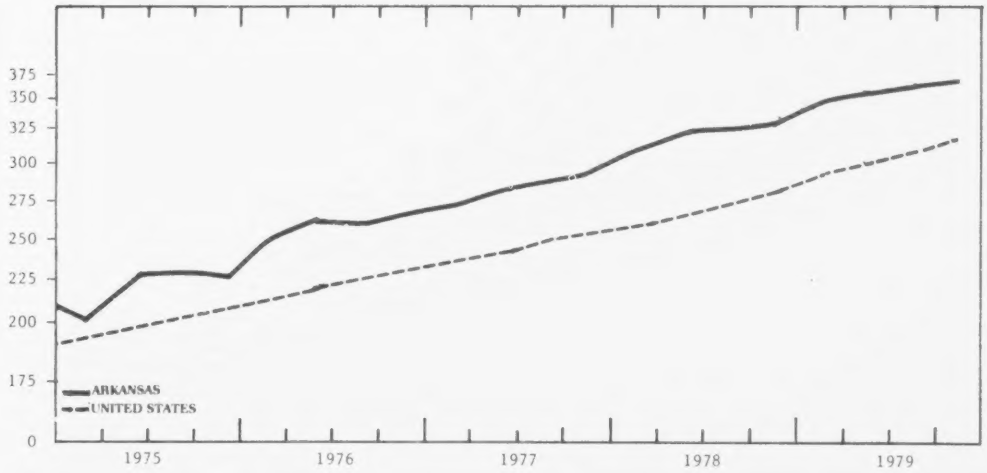
Seasonally adjusted

TIME PERIOD	EMPLOYMENT				UNEMPLOYMENT RATE	
	Wage and Salary		Agricultural	Total	Arkansas	United States
	Manufacturing	Nonmanufacturing				
1970	165,300	367,200	57,900	693,700	5.2	4.9
1971	166,500	372,000	58,900	702,400	5.5	6.0
1972	177,250	382,900	61,375	724,850	4.9	5.7
1973	197,200	417,500	59,000	783,700	4.2	4.8
1974	201,300	432,200	56,700	786,800	5.0	5.6
1975	175,500	444,500	61,000	776,700	8.9	8.5
1976	187,300	445,100	65,600	794,000	6.2	7.7
1977	208,900	483,400	62,800	837,700	6.0	7.0
1978	216,500	507,350	61,250	868,400	6.4	6.0
1979	217,750	526,700	65,800	904,000	6.3	5.8
Q-I	217,750	517,150	64,450	880,450	7.2*	5.7
Q-II	216,550	522,300	66,500	909,100	5.3*	5.7
Q-III	212,500	530,300	68,200	922,700	6.0*	5.8
Q-IV	215,200	536,950	64,050	903,650	6.7*	5.9

*Actual Rate. Effective January 1977 the Arkansas Employment Security Division revised its adjustments to employment data based on methods developed by the U.S. Bureau of Labor Statistics. As a result, the Arkansas unemployment rate cannot be seasonally adjusted at this time.

INDEX OF PERSONAL INCOME, ARKANSAS AND UNITED STATES

Quarterly data, seasonally adjusted, 1967 = 100



(Semi-logarithmic scale: equal slopes indicate equal rates of change)

Base Year to Date and Quarterly Changes in Personal Income

Seasonally adjusted, percent

	1967 to 1979 Q-IV	1978 Q-IV to 1979 Q-I	1979 Q-I to 1979 Q-II	1979 Q-II to 1979 Q-III	1979 Q-III to 1979 Q-IV
Arkansas	+ 269.7	+ 5.6	+ 0.3	+ 3.9[R]	+ 4.5
United States	+ 217.6	+ 3.7	+ 2.2	+ 2.8	+ 2.8

PERSONAL INCOME IN ARKANSAS

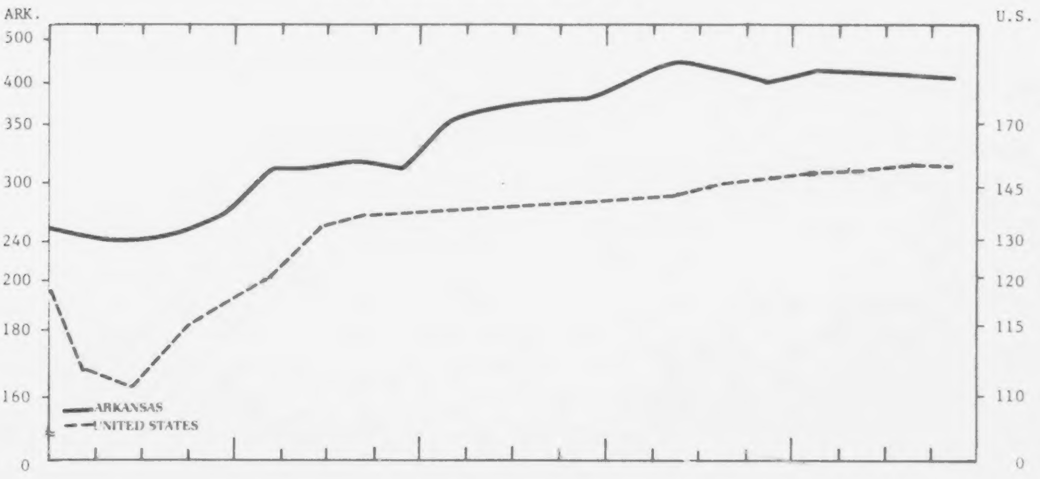
Millions of dollars, seasonally adjusted

Quarter	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979
Jan-Mar	1,288	1,446	1,585	1,789	2,142	2,070	2,508	2,837	3,118	3,596
Apr-Jun	1,379	1,474	1,599	1,894	2,242	2,373	2,667	2,948	3,208	3,605
Jul-Sep	1,415	1,528	1,662	1,978	2,213	2,391	2,626	2,984	3,315	3,745[R]
Oct-Dec	1,435	1,557	1,794	2,020	2,234	2,368	2,676	3,070	3,406	3,915
Annual	5,517	6,005	6,640	7,681	8,831	9,202	10,477	11,839	13,047	14,861

[R] Revised based on updated state personal income data, Survey of Current Business, January 1980, p. 28.

INDEX OF VALUE ADDED BY MANUFACTURE, ARKANSAS, AND INDEX OF MANUFACTURING PRODUCTION, UNITED STATES

Quarterly data, seasonally adjusted, 1967= 100



(Semi-logarithmic scale: equal slopes indicate equal rates of change)

Base Year to Date and Quarterly Changes in Manufacturing

Seasonally adjusted, percent

	1967 to 1979 Q-IV	1978 Q-IV to 1979 Q-I	1979 Q-I to 1979 Q-II	1979 Q-II to 1979 Q-III	1979 Q-III to 1979 Q-IV
Arkansas	+ 308.7	+ 4.3	- 0.5	- 2.7	- 0.5
United States	+ 52.1	+ 1.3	+ 0.3	+ 0.3	0.0

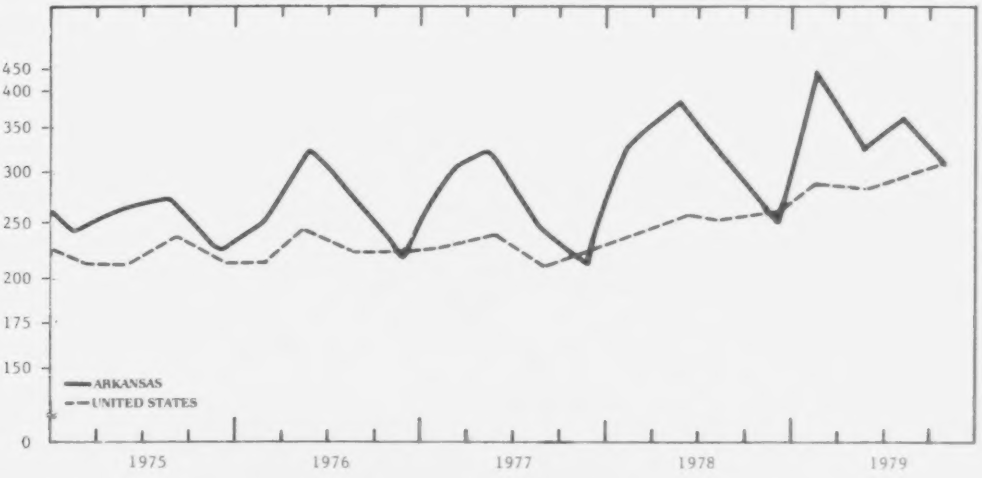
VALUE ADDED BY MANUFACTURE IN ARKANSAS

Millions of dollars

	Seasonally adjusted										Not seasonally adjusted
Quarter	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1979
Jan-Mar	521.7	578.9	728.7	825.9	959.6	899.5	1,158.2	1,362.9	1,598.4	1,666.0	1,516.0
Apr-Jun	532.5	581.8	724.9	858.4	975.8	895.1	1,161.4	1,443.1	1,659.2	1,656.2	1,623.1
Jul-Sep	536.1	609.5	704.0	819.3	963.0	925.7	1,194.4	1,451.8	1,619.3	1,611.1	1,740.0
Oct-Dec	552.3	644.5	724.7	856.9	924.0	985.2	1,160.8	1,468.6	1,597.3	1,602.4	1,650.5
Annual	2,142.6	2,414.7	2,882.3	3,360.5	3,822.4	3,705.5	4,674.8	5,726.4	6,474.2	6,535.7	

INDEX OF CASH RECEIPTS FROM FARM MARKETINGS
ARKANSAS AND UNITED STATES

Quarterly data, seasonally adjusted 1967 = 100



(Semi-logarithmic scale: equal slopes indicate equal rates of change)

Base Year to Date and Quarterly Changes in Cash Receipts

Seasonally adjusted, percent

	1967 to 1979 Q-IV	1978 Q-IV to 1979 Q-I	1979 Q-I to 1979 Q-II	1979 Q-II to 1979 Q-III	1979 Q-III to 1979 Q-IV
Arkansas	+ 204.5	+ 72.6^{R}	- 27.8^{R}	+ 13.7^{R}	- 15.5
United States	+ 208.1	+ 6.6	+ 4.1	- 0.3	+ 1.1

CASH RECEIPTS FROM FARM MARKETINGS
IN ARKANSAS

Thousands of dollars

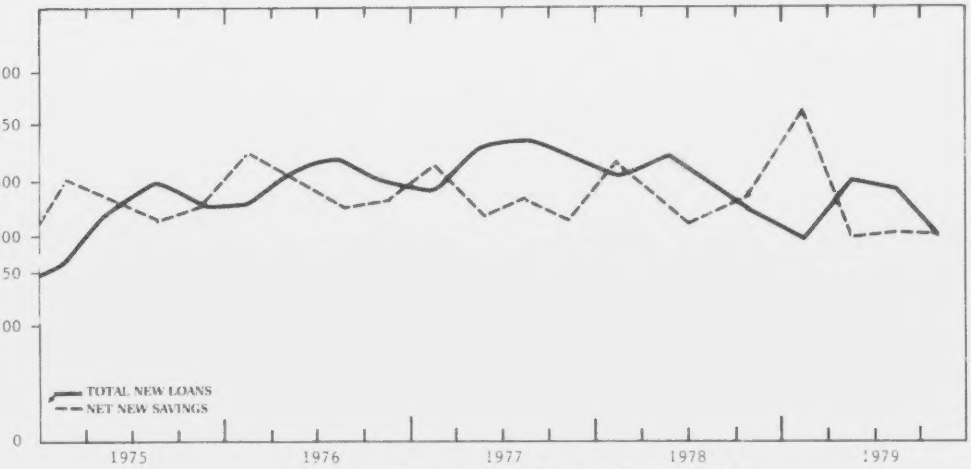
	Seasonally adjusted									Not seasonally adjusted
Quarter	1971	1972	1973	1974	1975	1976	1977	1978	1979	1979
Jan-Mar	262,963	314,037	385,687	718,418	529,492	565,575	686,105	790,387	1,038,085^{R}	701,121^{R}
Apr-Jun	313,908	323,552	488,760	705,678	584,346	740,954	703,457	899,118	532,344^{R}	532,475^{R}
Jul-Sep	272,248	323,286	554,500	568,678	609,324	621,624	578,357	721,275	835,030^{R}	604,076^{R}
Oct-Dec	308,094	369,370	580,100	618,796	508,651	497,214	500,169	601,443	705,385	1,334,023
Annual	1,157,213	1,330,245	2,009,047	2,611,570	2,231,813	2,425.367	2,468,088	3,012,223	3,231,844	

[R] Revisions reflect revised USDA estimates per release by USDA Economics, Statistics, and Cooperatives Service dated 02-29-80.

INDEXES OF ACTIVITY OF ARKANSAS SAVINGS AND LOAN ASSOCIATIONS

TOTAL NEW LOANS AND NET NEW SAVINGS

(Quarterly data, not seasonally adjusted 1967 = 100)



(Semi-logarithmic scale: equal slopes indicate equal rates of change)

Base Year to Date and Quarterly Changes in Activity of Arkansas S & L Associations

Not seasonally adjusted, percent

	1967 to 1979 Q-IV	1978 Q-IV to 1979 Q-I	1979 Q-I to 1979 Q-II	1979 Q-II to 1979 Q-III	1979 Q-III to 1979 Q-IV
Total New Loans	+ 100.6	- 28.2	+ 50.8	- 7.5	- 28.1
Net New Savings	+ 109.2	+ 60.4	- 60.4	+ 9.7	+ 2.7

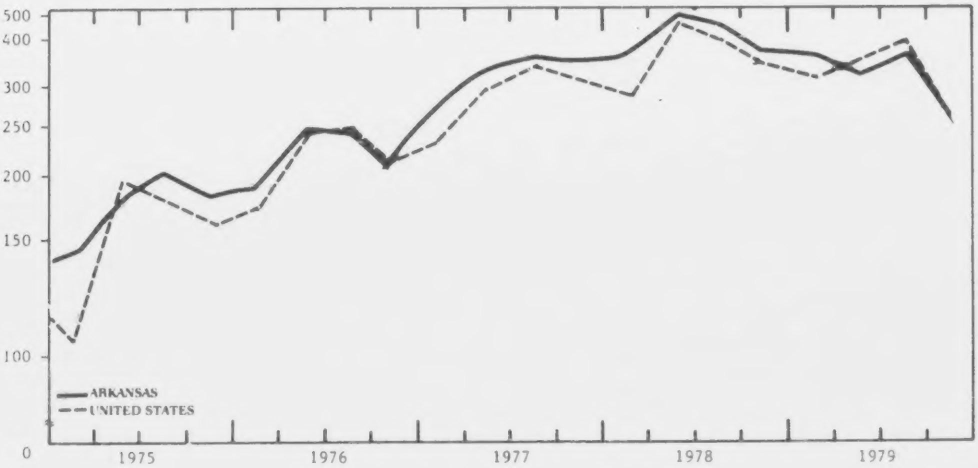
ECONOMIC ACTIVITY OF ARKANSAS SAVINGS AND LOAN ASSOCIATIONS

Thousands of dollars

TIME PERIOD	TOTAL NEW LOANS		NET NEW SAVINGS	
	Current $	1967 $	Current $	1967 $
1973	384,229	287,788	223,736	168,993
1974	300,152	203,915	188,400	128,872
1975	413,366	255,678	309,304	192,119
1976	606,400	355,280	393,300	231,050
1977	815,800	448,590	405,000	223,492
1978	729,300	373,700	416,900	213,610
1979	625,900	290,560	436,830	204,525
Q-I	122,600	59,240	185,830	89,785
Q-II	191,200	89,300	76,200	35,590
Q-III	176,900	82,620	83,600	39,050
Q-IV	135,200	59,400	91,200	40,100

INDEX OF RESIDENTIAL CONSTRUCTION CONTRACTS
ARKANSAS AND UNITED STATES

Quarterly data, not seasonally adjusted 1967 = 100



(Semi-logarithmic scale: equal slopes indicate equal rates of change)

Base Year to Date and Quarterly Changes in Residential Construction

Not seasonally adjusted, percent

	1967 to 1979 Q-IV	1978 Q-IV to 1979 Q-I	1979 Q-I to 1979 Q-II	1979 Q-II to 1979 Q-III	1979 Q-III to 1979 Q-IV
Arkansas	+ 154.1	- 10.6	- 4.8	+ 15.1	- 32.8
United States	+ 149.3	- 8.8	+ 33.5	- 4.7	- 39.6

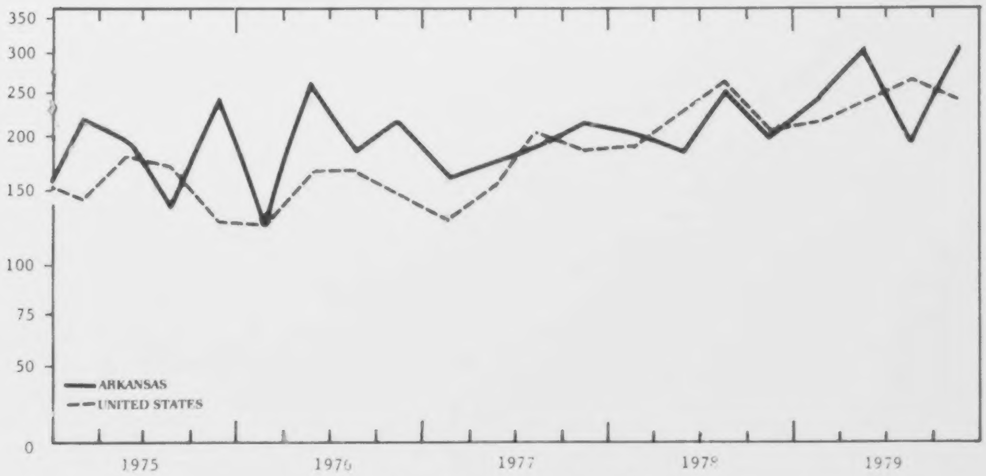
RESIDENTIAL CONSTRUCTION CONTRACTS
IN ARKANSAS

Thousands of dollars

	Seasonally adjusted									Not seasonally adjusted
Quarter	1971	1972	1973	1974	1975	1976	1977	1978	1979	1979
Jan-Mar	70,885	105,596	124,660	93,249	84,488	116,379	160,861	220,739	205,119	185,964
Apr-Jun	77,081	123,735	122,990	94,963	85,740	117,164	173,558	236,915	153,917	177,105
Jul-Sep	93,567	127,702	111,070	84,214	98,557	122,732	182,210	227,633	193,364	203,879
Oct-Dec	112,722	143,130	91,317	82,505	104,656	134,927	217,222	236,718	154,130	136,922
Annual	354,925	500,163	450,037	354,931	373,441	491,202	733,851	922,005	706,530	

INDEX OF NONRESIDENTIAL CONSTRUCTION CONTRACTS
ARKANSAS AND UNITED STATES

Quarterly data, not seasonally adjusted 1967 = 100



(Semi-logarithmic scale: equal slopes indicate equal rates of change)

Base Year to Date and Quarterly Changes in Nonresidential Construction Contracts

Not seasonally adjusted, percent

	1967 to 1979 Q-IV	1978 Q-IV to 1979 Q-I	1979 Q-I to 1979 Q-II	1979 Q-II to 1979 Q-III	1979 Q-III to 1979 Q-IV
Arkansas	+ 212.5	+ 28.9	+ 23.6	- 36.1	+ 60.1
United States	+ 140.5	+ 7.6	+ 19.7	- 2.7	- 9.0

NONRESIDENTAL CONSTRUCTION CONTRACTS
IN ARKANSAS

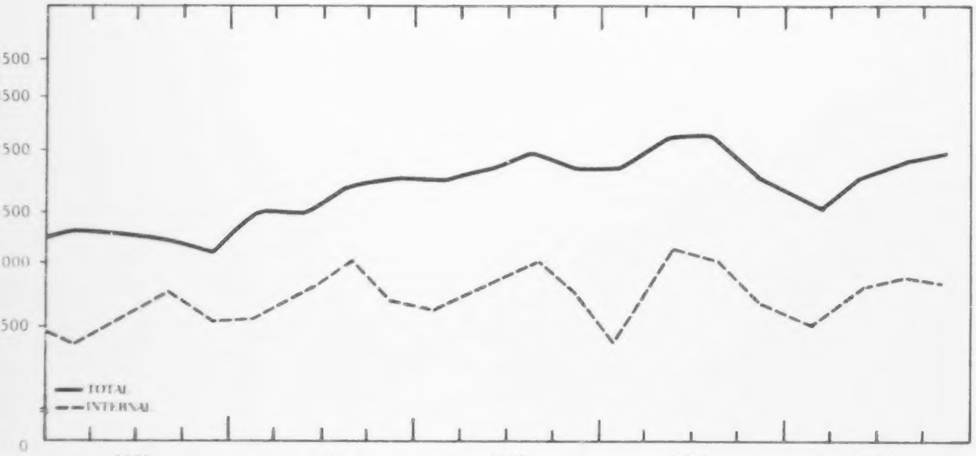
Thousands of dollars, not seasonally adjusted

Quarter	1971	1972	1973	1974	1975	1976	1977	1978	1979
Jan-Mar	24,546	33,213	47,676	56,094	79,225	43,591	57,486	72,851	88,988
Apr-Jun	52,512	45,800	40,140	63,607	67,424	93,906	63,726	60,479	109,976
Jul-Sep	28,546	51,564	63,776	106,530	45,566	67,913	67,632	90,471	70,296
Oct-Dec	37,632	57,002	54,446	56,247	89,446	79,004	76,866	69,041	112,549
Annual	143,236	187,579	206,038	272,478	281,661	284,414	265,710	292,842	

WATERBORNE COMMERCE

McCLELLAN-KERR ARKANSAS RIVER NAVIGATION SYSTEM

Quarterly data in thousands of short tons, not seasonally adjusted



(Semi-logarithmic scale: equal slopes indicate equal rates of change)

Base Year to Date and Quarterly Changes in Total and Internal Tonnages

Not seasonally adjusted, percent
Base - Ave. Qtr. 1971

	1971 to 1979 Q-IV	1979 Q-IV to 1979 Q-I	1979 Q-I to 1979 Q-II	1979 Q-II to 1979 Q-III	1979 Q-III to 1979 Q-IV
Total	+ 173.5	- 11.9	+ 9.3	+ 13.5	+ 4.1
Internal	+ 37.6	- 25.8	+ 45.3	+ 18.1	- 3.4

FREIGHT TRAFFIC

ARKANSAS RIVER COMMERCE

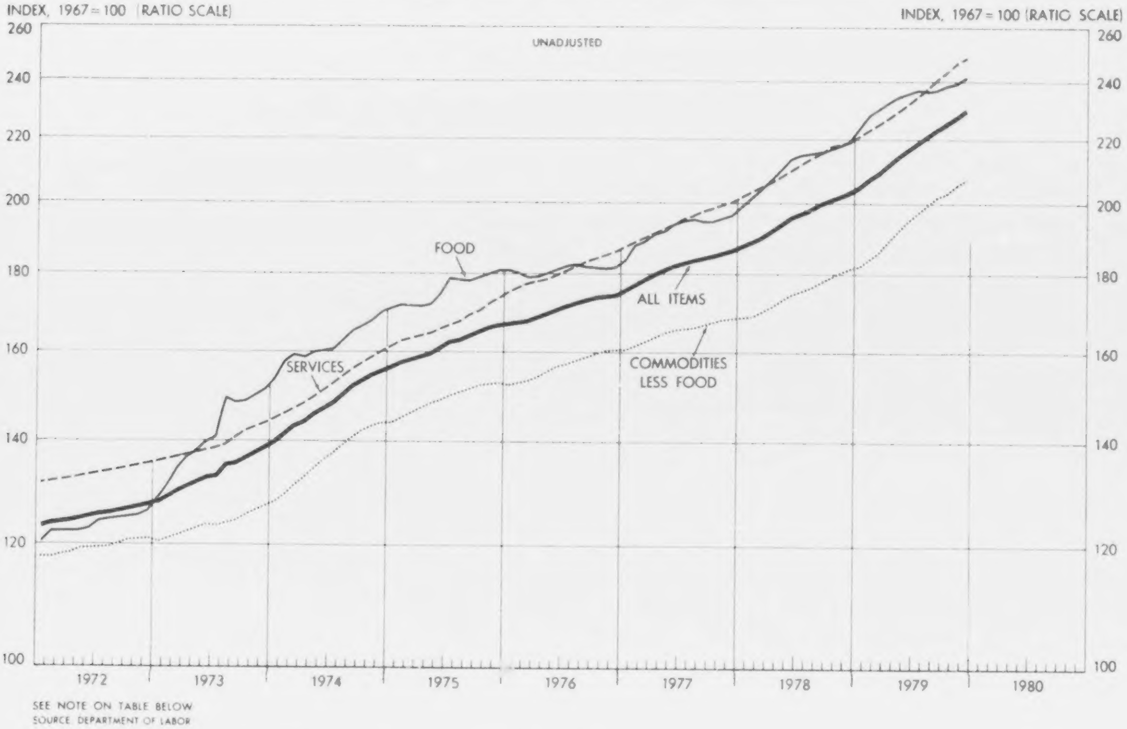
Thousands of short tons, not seasonally adjusted.

TIME PERIOD	TRAFFIC TONNAGES*			
	INBOUND	OUTBOUND	INTERNAL	TOTAL
1972	1,174	1,031	3,463	5,668
1973	1,802	656	2,674	5,132
1974	1,950	775	2,959	6,060
1975	1,440	870	2,465	5,204
1976	1,988	1,663	3,033	7,078
1977	2,841	2,339	3,463	9,138
1978	2,595	3,899	3,170	10,216
1979	2,026	3,456	2,932	8,926
Q-I	467	720	503	1,930
Q-II	477	785	731	2,109
Q-III	541	919	864	2,394
Q-IV	541	1,032	834	2,493

*Total tonnage includes "through traffic"--shipments which originate and terminate outside the Arkansas River Commerce Area.

CONSUMER PRICES

In December, the consumer price index for all urban consumers rose 1.1 percent (1.2 percent seasonally adjusted). Food prices rose 1.1 percent (1.3 percent seasonally adjusted). Nonfood commodity prices rose 0.9 percent (1.1 percent seasonally adjusted) and services prices were up 1.3 percent (also 1.3 percent seasonally adjusted).



SEE NOTE ON TABLE BELOW
SOURCE: DEPARTMENT OF LABOR

[1967=100]

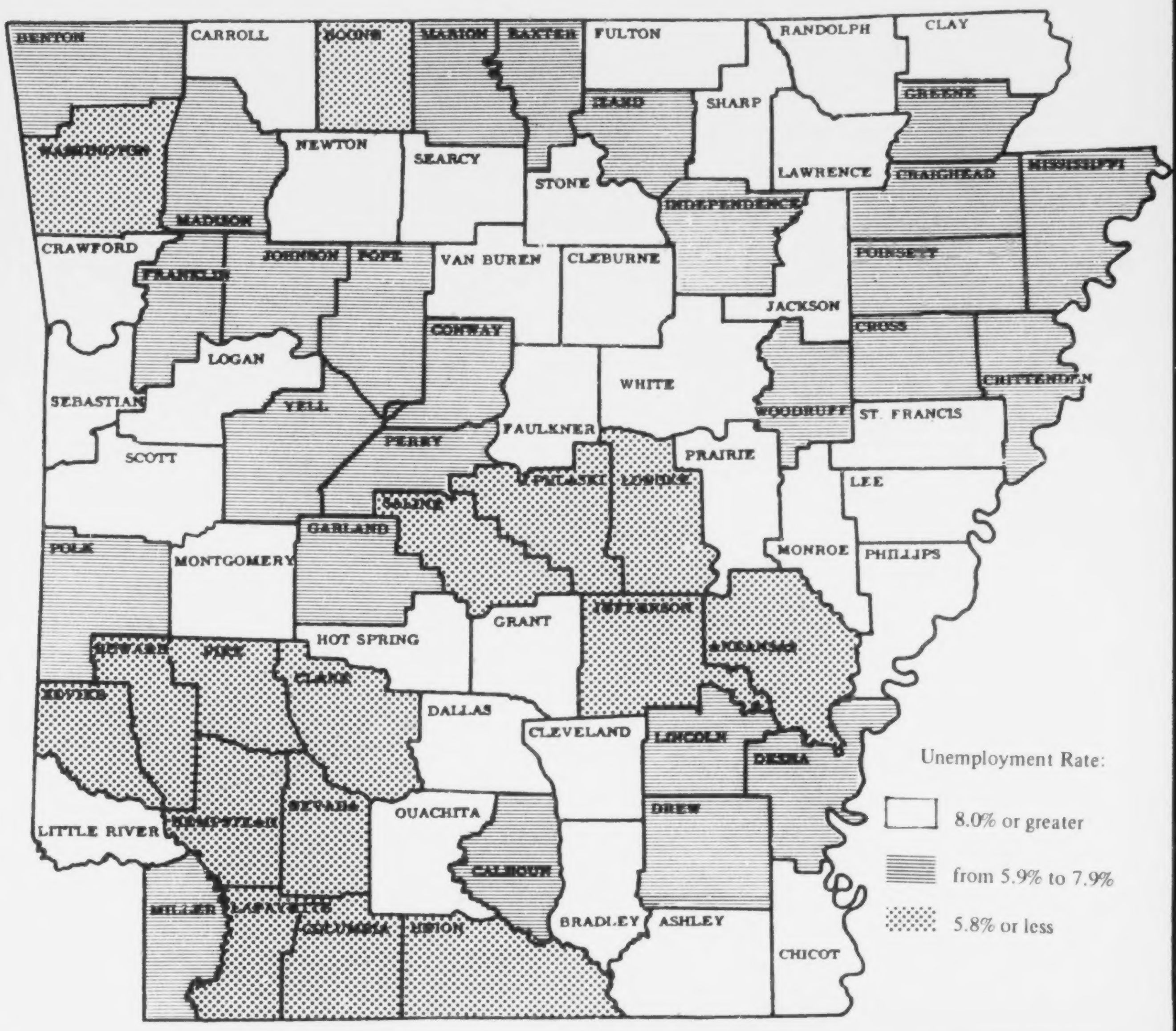
Period	All items	Food	Commodities less food	Services	All commodities	Food			Commodities less food			Services
						All	Food at home	Food away from home	All	Durable	Nondurable	
1972	125. 3	123. 5	119. 4	133. 3	120. 9	123. 5	121. 6	131. 1	119. 4	118. 9	119. 8	133. 3
1973	133. 1	141. 4	123. 5	139. 1	129. 9	141. 4	141. 4	141. 4	123. 5	121. 9	124. 8	139. 1
1974	147. 7	161. 7	136. 6	152. 1	145. 5	161. 7	162. 4	159. 4	136. 6	130. 6	140. 9	152. 1
1975	161. 2	175. 4	149. 1	166. 6	158. 4	175. 4	175. 8	174. 3	149. 1	145. 5	151. 7	166. 6
1976	170. 5	180. 8	156. 6	180. 4	165. 2	180. 8	179. 5	186. 1	156. 6	154. 3	158. 3	180. 4
1977	181. 5	192. 2	165. 1	194. 3	174. 7	192. 2	190. 2	200. 3	165. 1	163. 2	166. 5	194. 3
1978	195. 4	211. 4	174. 7	210. 9	187. 1	211. 4	210. 2	218. 4	174. 7	173. 9	174. 3	210. 9
1979	217. 4	234. 5	195. 1	234. 2	208. 4	234. 5	232. 9	242. 9	195. 1	191. 1	198. 7	234. 2
	Unadjusted				Seasonally adjusted							
1978: Dec	202. 9	219. 4	181. 3	219. 2	194. 6	221. 3	220. 1	227. 8	181. 3	181. 6	179. 4	219. 5
1979: Jan	204. 7	223. 9	181. 9	221. 1	196. 7	224. 5	223. 7	230. 7	182. 9	183. 3	181. 4	220. 7
Feb	207. 1	228. 2	183. 7	223. 3	199. 1	228. 1	227. 7	233. 6	134. 8	185. 1	182. 9	223. 1
Mar	209. 1	230. 4	185. 9	225. 1	201. 3	230. 5	230. 0	236. 2	186. 9	186. 0	186. 4	225. 1
Apr	211. 5	232. 3	188. 9	227. 0	203. 8	232. 7	232. 4	238. 2	189. 4	187. 6	190. 0	227. 2
May	214. 1	234. 3	191. 6	229. 5	205. 7	234. 3	233. 5	240. 9	191. 4	188. 6	193 4	230. 1
June	216. 6	235. 4	194. 7	232. 1	207. 7	234. 7	233. 2	242. 9	193. 9	190. 1	197. 4	232. 5
July	218. 9	236. 9	197. 0	234. 7	209. 5	235. 0	233. 0	244. 4	196. 3	191. 5	201. 5	235. 0
Aug	221. 1	236. 3	199. 5	237. 6	211. 4	235. 0	232. 3	246. 0	198. 9	192. 8	205. 4	237. 8
Sept	223. 4	237. 1	201. 8	240. 7	213. 8	237. 1	234. 8	247. 4	201. 3	194. 1	209. 0	240. 4
Oct	225. 4	238. 2	203. 4	243. 6	215. 5	238. 9	236. 4	249. 6	202. 9	195. 4	210. 5	243. 4
Nov	227. 5	239. 1	205. 4	246. 2	217. 5	240. 2	237. 6	251. 3	205. 2	198. 4	211. 8	246. 1
Dec	229. 9	241. 7	207. 2	249. 3	220. 0	243. 4	241. 0	253. 9	207. 4	200. 2	214. 6	249. 3

NOTE.—Data beginning January 1978 relate to all urban consumers. Earlier data related to urban wage earners and clerical workers.

Source: Department of Labor, Bureau of Labor Statistics.

PRELIMINARY LABOR FORCE ESTIMATES—DECEMBER 1979

The number of employed workers in the State of Arkansas totaled 871,800 in December. This was 30,100 below the November level of 901,900, but 26,000 above the December 1978 level of 845,800. Unemployment stood at 61,900 in December, an increase of 4,800 since November. The unemployment rate increased from 6 percent in November to 6.6 percent in December. Unemployment rates in the State's four Standard Metropolitan Statistical Areas ranged from a low of 5.0 percent in the Little Rock-North Little Rock SMSA to a high of 8.0 percent in the Fort Smith SMSA. Both the Fayetteville-Springdale SMSA and the Pine Bluff SMSA had unemployment rates of 5.4 percent.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HOWARD
PIKE
CLARK
SEVIER
DALLAS
CLEVELAND
LINCOLN
DESHA
Unemployment Rate:
8.0% or greater
from 5.9% to 7.9%
5.8% or less
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PRELIMINARY LABOR FORCE ESTIMATES—DECEMBER 1979

State and SMSA's	Civilian Labor Force	Unemployment Rate	Total Employment
UNITED STATES	103,884,000	5.6	98,047,000
STATE OF ARKANSAS[1]	933,700	6.6	871,800
Fayetteville-Springdale SMSA (Benton & Washington Counties)	74,850	5.4	70,800
Fort Smith SMSA (Crawford & Sebastian Counties in Arkansas and LeFlore & Sequoyah Counties in Oklahoma)	82,650	8.0	76,000
Little Rock-North Little Rock SMSA (Pulaski & Saline Counties)	182,500	5.0	173,400
Pine Bluff SMSA (Jefferson County)	36,250	5.4	34,300

County	Civilian Labor Force	Unemployment Rate	Total Employment	County	Civilian Labor Force	Unemployment Rate	Total Employment
Arkansas	10,175	5.7	9,600	Lee	4,350	17.2	3,600
Ashley	10,000	11.0	8,900	Lincoln	3,200	7.0	2,975
Baxter	9,225	6.2	8,650	Little River	5,200	11.1	4,625
Benton	30,550	5.1	29,000	Logan	6,575	10.6	5,875
Boone	11,575	4.8	11,025	Lonoke	13,900	5.0	13,200
Bradley	5,600	8.0	5,150	Madison	4,250	7.1	3,950
Calhoun	1,950	7.7	1,800	Marion	4,825	6.2	4,525
Carroll	6,575	12.9	5,725	Miller	13,925	7.5	12,875
Chicot	6,250	8.8	5,700	Mississippi	24,100	7.5	22,300
Clark	8,750	5.4	8,275	Monroe	4,825	8.8	4,400
Clay	7,825	11.2	6,950	Montgomery	2,225	15.7	1,875
Cleburne	5,625	8.9	5,125	Nevada	4,000	5.0	3,800
Cleveland	2,025	8.6	1,850	Newton	1,925	11.7	1,700
Columbia	12,125	5.6	11,450	Ouachita	11,075	8.1	10,175
Conway	7,600	6.3	7,125	Perry	3,025	7.4	2,800
Craighead	29,700	6.2	27,850	Phillips	12,725	13.8	10,975
Crawford	15,075	9.3	13,675	Pike	4,025	5.6	3,800
Crittenden	23,750	7.3	22,025	Poinsett	10,350	7.0	9,625
Cross	8,350	6.9	7,775	Polk	5,375	7.4	4,975
Dallas	4,025	9.3	3,650	Pope	14,950	7.2	13,875
Desha	6,600	7.2	6,125	Prairie	2,750	11.8	2,425
Drew	7,825	7.7	7,225	Pulaski	160,500	5.0	152,450
Faulkner	20,125	8.0	18,525	Randolph	7,050	8.5	6,450
Franklin	5,825	7.3	5,400	St. Francis	11,875	10.1	10,675
Fulton	2,975	8.4	2,725	Saline	22,000	4.8	20,950
Garland	28,900	7.5	26,725	Scott	3,025	9.9	2,725
Grant	4,400	8.0	4,050	Searcy	2,400	9.4	2,175
Greene	13,075	6.9	12,175	Sebastian	40,275	8.8	36,750
Hempstead	10,000	5.3	9,475	Sevier	5,725	5.2	5,425
Hot Spring	10,200	9.3	9.250	Sharp	3,700	11.5	3,275
Howard	6,850	2.9	6,650	Stone	2,950	9.3	2,675
Independence	13,900	7.0	12,925	Union	23,000	5.4	21,750
Izard	3,500	7.1	3,250	Van Buren	3,725	13.4	3,225
Jackson	8,800	10.2	7,900	Washington	44,300	5.6	41,800
Jefferson	36,250	5.4	34,300	White	20,850	11.6	18,425
Johnson	7,325	6.8	6,825	Woodruff	3,825	7.8	3,525
Lafayette	3,175	5.5	3,000	Yell	7,150	6.3	6,700
Lawrence	7,700	12.3	6,750				

[1] State labor force, unemployment rate, and total employment figures have been revised. SMSA and county figures have not been revised from preliminary estimates.

Source: The Research and Statistics Section, Arkansas Employment Security Division.

THE MINERAL INDUSTRY OF ARKANSAS IN 1979

According to the Bureau of Mines, U.S. Department of the Interior, the value of nonfuel mineral production in Arkansas was $320 million in 1979. The 21 percent increase over the mineral value recorded in 1978 was highlighted by a record output of bromine. In 1979, every nonfuel mineral commodity registered an increase in value over that of 1978, although only 5 of the 15 commodities recorded production gains. Arkansas continued to lead the Nation in the production of bauxite and bromine and regained its first-ranked position among the States in output of vanadium.

About 4 of every 5 dollars of the State's total nonfuel mineral value was contributed by the nonmetallic sector. Leading the nonmetallic commodities in value were bromine, cement, sand and gravel, and stone. Slight decreases in the production of clay, cement, gypsum, sand and gravel, and stone reflect a downturn in demand for these industrial minerals by the construction industry.

Vanadium and bauxite ores were the only metallic minerals mined in Arkasnas in 1979. The State's total metallic mineral value showed more than a twofold increase primarily because of the resumption of vanadium mining in late 1978.

Source: U.S. Department of the Interior, Bureau of Mines, Washington, D.C., Annual Preliminary Summary, February 29, 1980.

Table 1

NONFUEL MINERAL PRODUCTION IN ARKANSAS 1/

Mineral		1978		1979p/	
		Quantity	Value (thousands)	Quantity	Value (thousands)
Bauxite	thousand long tons	1,423	$ 21,103	1,407	$ 22,000
Clays	thousand short tons	1,137	5,119	1,015	6,326
Gem Stones		NA	150	NA	150
Lime	thousand short tons	171	5,708	158	6,554
Sand and gravel 2/	thousand short tons	16,900	36,510	16,500	37,000
Stone:					
Crushed	do	19,960	53,460	19,676	58,116
Dimension	do	11	223	10	225
Value of items that cannot be disclosed: Abrasives (natural), Barite, Bromine, cement, gypsum, sand and gravel (industrial), soapstone, tripoli, and vanadium		XX	142,791	XX	189,903
Total		XX	265,064	XX	320,274

p/ Preliminary. NA Not available. XX Not applicable.

1/ Production as measured by mine shipments, sales, or marketable production (including consumption by producers).

2/ Excludes industrial sand and gravel.

Arkansas Business and Economic Review

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In an effort to ensure that the articles appearing in the *Review* meet standards consistent with the goals of the College of Business Administration and of the University of Arkansas, an Editoral Advisory Board has been created to referee manuscripts submitted for publication. The current members of the Board are:

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EXPERIENCE OF U.S. EXHIBITORS IN SELECT EASTERN EUROPEAN TRADE FAIRS

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INTRODUCTION

Much recent attention in the U.S. has focused on exporting. This is not surprising in the light of recent record foreign trade deficits which hit a staggering $28.5 billion in 1978.[1]

Federal concern over this trade imbalance was reflected in the new National Export Policy announced by President Carter in September 1978.[2] Whether his suggestions–ranging from direct assistance to exporters to proposals to reduce trade barriers–will improve the U.S. position is problematic. If nothing else, however, the new policy serves to call attention to the export sector which has long been ignored because of the huge U.S. domestic market. In fact, in 1977, exports accounted for about 5 percent of total private sector employment and only 7 percent of the U.S. Gross National Product (GNP).[3]

EXPANDING EXPORTS

Certainly, many Federal efforts have been made through the U.S. Department of Commerce to assist U.S. businesses in marketing abroad and in expanding exports. In particular, those actions have been directed toward stimulating greater numbers of U.S. producers, especially smaller firms, to participate in overseas business activities and in providing assistance in markets that are more difficult or "unique" for most businesses. Among such endeavors, the Commerce Department sponsors a number of overseas promotional activities ranging from mobile trade exhibitions to twelve full-scale trade or marketing centers in key locations.[4]

An example, from a Western perspective, of a "unique" market area is the Eastern European bloc of countries where purchases are made through a foreign trade office (FTO). For the U.S. firm, an essential part of the process of "doing business" in these areas is the displaying of company products or services at the appropriate trade fair. In recognition of the role that trade fairs play in bringing together the U.S. firm and the buyer (appropriate FTO), the East-West Trade Division of the U.S. Department of Commerce (EWTD) sponsors a U.S. pavilion/exhibition at all of the leading international trade fairs held in Eastern Europe. Such sponsorship is designed to provide an environment where potential buyers (FTO) and sellers (U.S. firms) can conduct various stages of negotiation or merely initiate contact for future business.

THE STUDY

In this paper, the authors present the findings of a study designed to determine the views and experiences of U.S. firms, large and small, who have participated in U.S. exhibitions at four recent (1978) international trade fairs in Eastern Europe. Among other things, this research sought the U.S. exhibitors' perceptions regarding: (1) the value to their companies for having participated in the particular fair; (2) the quality of logistical support provided by the U.S. and by the host government; (3) the attitudes of potential users and buyers toward the offered products and services; and (4) the quality of the U.S. exhibitions in comparison with those sponsored by other nations, such as Japan and Germany. To some extent, the results offer an evaluation of U.S. trade fair promotional efforts in those countries. In addition, they add considerable insight into the importance and use of trade fairs in the negotiation process—an area given little attention in the past but one of special potential for the smaller firm unable to have extensive overseas representation.

The fairs selected for the study included: the Brno International Engineering Fair, Czechoslovakia, September 13-21, 1978; the Nauka Exhibition for Scientific and Laboratory Instruments, Moscow, USSR, October 12-23, 1978; the Bucharest Fall Fair, Romania, October 5-14, 1978; and the Poznan Trade Fair, Poland, June 11-20, 1978. The U.S. exhibitors at the Poznan Fair were used in pretesting the survey instrument, which was then used with slight modification in surveying the exhibitors at the other three fairs.

A list of U.S. firms participating in the four fairs was provided by the EWTD. That list also included the names of the executives who were primarily involved in each fair or who directed the overall marketing efforts of the participating firms. A questionnaire, employing both highly-structured and open-ended questions, was sent to the appropriate respondent in each of the U.S. firms. As noted above, the Poznan exhibitors served as the pretest group. However, the limited modification of the instrument for the subsequent three groups of exhibitors still permitted the inclusion of the Poznan respondents in the findings reported here. In fact, the only major difference between the Poznan and the other fair respondents was that telephone contacts were made with selected Poznan exhibitors to encourage their responses. (This effort added roughly 10 percent to the response rate for that sample.)

As shown in Table 1, the response rate for this survey was 85 percent, which is particularly high for survey research. Responses were received from 32 of the 34 U.S. exhibitors at the Poznan Fair, 18 of the 23 at Nauka, 16 of the 18 at Brno, and 9 of the 11 at Bucharest. Furthermore, a distinction is made between respondents who have participated more than four years and those with four years or less experience. From the Poznan phase of this research, it became obvious that the amount of experience affected the responses and that four years appeared to be the appropriate break point. In addition, for analysis purposes, first year participants have been considered separately for certain questions.

It should be noted that the participants in such Eastern European Fairs are firms in highly specialized industries—most selling capital or industrial goods or highly technical equipment such as that used in hospitals. Also, one should note in Table 2 that less than 20 percent are first year firms and that more than 40 percent have participated for over four years. Obviously, this finding raises a question ". . . are the trade fairs succeeding in bringing enough new U.S. firms into East-West Trade?" This question will be explored later.

THE FINDINGS

The study findings indicate that the majority of exhibitors were extremely pleased with most aspects of their trade fair participation. They generally felt that they had, at least, laid the groundwork for negotiations that would lead to significant transactions.

The results of the major issues in the study will be presented here. In particular, the firms' perceived results from fair participation, the interest and willingness displayed by potential customers, the participants' views on logistical arrangements, and the perceived barriers to greater success in dealing with Eastern European FTOs will be discussed.

Perceived Results. As indicated in Table 3, roughly 56 percent of the total respondents felt that they had achieved what they "had expected" through their fair participation. An additional one-fifth even felt their results had exceeded their expectations. In fact, only the Nauka Fair appeared to leave some relatively disappointed parti-

Table 1

OLD VS. NEW RESPONDENTS BY COUNTRY AND TOTAL RESPONSE RATES

Fair	Old	New*	Total Reported	Percent of Sample	Total Sample
Bucharest	5	4	9	82%	11
Poznan	17	15	32	94%	34
Nauka	7	11	18	78%	23
Brno	5	11	16	84%	19
TOTALS	34	41	75	85%	88

*New firms are those who have participated in this fair four years or less. Old firms have participated more than four years.

Table 2

VIEWS ON THE RESULTS ACHIEVED BY FIRMS PARTICIPATING FIRST TIME

Fair	N	Much More than Expected	Somewhat More than Expected	As Expected	Somewhat Less than Expected	Much Less than Expected
Bucharest	1	0	0	0	0	1
Poznan	5	0	1	4	0	0
Nauka	4	0	3	0	1	0
Brno	3	0	0	3	C	0
TOTALS	13	0	4	7	1	1

Table 3

PARTICIPANTS' PERCEPTIONS REGARDING STATEMENTS ON ACHIEVING OBJECTIVES

		Number					
Statement	Trade Fair	Much More than Expected	Somewhat More than Expected	As Expected	Somewhat Less than Expected	Much Less than Expected	n
1. In my opinion, results achieved by our firm from the 1978 fairs were:	Bucharest	1	1	5	1	1	9
	Brno	0	1	12	1	2	16
	Nauka	3	5	6	1	3	18
	Poznan	0	4	19	7	2	32
	Total	4	11	42	10	8	75

Table 4

PARTICIPANTS' PERCEPTIONS REGARDING SELECT STATEMENTS ON CUSTOMERS' INTEREST

		Number					
Statement	Trade Fair	Very Interested	Somewhat Interested	Neutral	Somewhat Uninterested	Very Uninterested	n
1. How would you describe the interest displayed by users in your product(s)?	Bucharest	3	6	0	0	0	9
	Brno	7	6	2	0	0	15
	Nauka	6	8	2	0	1	17
	Poznan	18	11	2	1	0	32
	Total	34	31	6	1	1	73
		Very Willing	Somewhat Willing	Neutral	Somewhat Unwilling	Very Unwilling	n
2. How would you describe the willingness of FTOs to buy your product(s)?	Bucharest	1	5	1	2	0	9
	Brno	5	7	1	0	3	16
	Nauka	4	8	4	0	2	18
	Poznan	10	14	6	1	1	32
	Total	20	34	12	3	6	75

cipants: one-fourth of that group indicated that they had achieved less than their expectations.

Only one of the "disappointed" Nauka exhibitors was participating for the first time, Table 2. Therefore, it was likely prior experience rather than lack of experience that led those particular participants to have had higher expectations than they actually achieved. In fact, they may have hoped to conclude negotiations that had been initiated earlier. In contrast to the "disappointed" Moscow exhibitors, there was also a greater proportion of Nauka participants who felt that they had more than accomplished their goals.

Potential reasons are numerous for these widely differing views on achievement of "expectations" at Moscow. However, it might be noted that "currency constraints," i.e., the lack of hard currency, seemed to be a greater factor in dealing with the U.S.S.R. FTOs than with those in Poland, Romania and Czeckoslovakia. Still, of the firms that had been disappointed, all but one plan to return to Nauka in the future.

Product/Service Interest. In light of their previous response, it may seem surprising to note in Table 4 that all but one of the Nauka respondents felt that there was interest (or at least no disinterest) shown in their products and services. However, the second statement concerning "willingness to buy" substantiates to a great degree the problem cited above. It may well be that the current hard currency shortage in the U.S.S.R. may have caused a much closer look at priorities or it may simply be that a few of the U.S. firms were not competitive (product on price) with other Western sources.

In general, most firms felt strongly that the customers, wherever the trade fair, were interested and willing to buy their products. Both the greatest interest and the willingness to buy were apparently shown by the potential Polish users at Poznan.

Logistics. As shown in Table 5, the exhibitors at various fairs were clearly more critical of their hosts' arrangements than they were of the U.S. administration's logistical support. Nearly one-fifth of the exhibitors felt that the host country was to some degree ineffective in its arrangements, while less than 10 percent were critical of the U.S. handling of arrangements. A higher proportion criticisms of host country arrangements were focused on Brno. Those criticisms ranged from insufficient space for displays and negotiations to a comment regarding hotel and customs arrangements.

In contrast, any criticisms regarding the U.S. arrangements tended to relate specifically to providing better information to potential end users in advance or to the need for obtaining space in a better pavilion. Comments on the conditions in Romania included requests for more transportation to the city center from the fair site, better lighting in the pavilion, and less noisy media presentations. Hotel reservations were also reportedly difficult to obtain. The major criticism of the U.S. involvement in the Romanian exhibition was that the display on cultural aspects of the United States was *not* viewed as appropriate at an electronics fair in Eastern Europe. One respondent remarked that a display depicting U.S. aid to developing countries might have been more suitable. Again, however, the criticisms were minimal and were far outweighed by the plusses noted earlier.

FACTORS LIMITING TRADE

Consistent with their views on willingness to buy, the respondents tended to feel that it was the lack of the FTO ability to buy or "hard currency constraints" that was the single greatest barrier to increased trade, Table 6. Overall, some *fifty-plus* percent of the respondents saw this as the factor that limited success at the fairs.

An exception was found with the Nauka exhibitors. While "hard currency constraints" was the most frequently mentioned barrier, it was cited by only *one-third* of the respondents. Virtually an equal number felt foreign competition to be a greater barrier to their successful negotiations. Several other reasons, including poor host logistics, received support.

In reflecting on trade with Eastern Europe, it is not unexpected that "hard currency" concerns received so much attention. Here the U.S. traders must be aware of other alternatives, including barter and countertrade, although many of them probably have limited interest in such transactions.

CONCLUSIONS

The major findings from the overall study of the attitudes of U.S. exhibitors in the four Eastern European trade fairs have been discussed here. Generally those that have participated seem to be satisfied with the trade fairs and particularly with the efforts of the East-West Trade Bureau. The big problem, of course, is that relatively few U.S. firms are participating in such fairs. Naturally, one is reminded of our comment at the outset that only a fraction of the firms who have a potential for exporting actually do export. Therefore, we should not be surprised that many who are likely candidates for participation in East-West trade are not becoming involved in these trade fairs and that relatively few exhibitors are "first-time participants." This is clearly the biggest difficulty plaguing the U.S. trade fair promoters rather than the performance once a firm has become a participator. Certainly trade

Table 5

PARTICIPANTS' PERCEPTIONS REGARDING STATEMENTS ON LOGISTICS

Statement	Trade Fair	Number					
		Very Effective	Somewhat Effective	Neutral	Somewhat Ineffective	Very Ineffective	n
1. How would you evaluate the U.S. administration's overall handling of the logistical arrangements?	Bucharest	4	4	0	0	0	8
	Brno	6	4	3	2	0	15
	Nauka	7	9	0	2	0	18
	Poznan	17	11	3	1	0	32
	Total	34	28	6	5	0	73
2. How would you evaluate the host administration's overall handling of the logistical arrangements?	Bucharest	1	3	1	2	0	7
	Brno	1	7	3	3	1	15
	Nauka	1	6	6	4	1	18
	Poznan	7	16	4	4	0	32
	Total	10	32	14	13	2	72

Table 6

PARTICIPANTS' PERCEPTIONS REGARDING SELECT STATEMENTS ON BARRIERS TO INCREASED SUCCESS

Statement: In your opinion, which factor(s) interferred in achieving greater success as a result of the Fair?

	All Response*	Percent	Poznan	Bucharest	Nauka	Brno
Hard currency constraints on potential users	44	51%	17	6	9	12
Poor U.S. logistics	3	3%	1	0	1	1
Poor Host country logistics	10	12%	3	2	3	2
Poor facilities	3	3%	1	0	0	2
Lack of demand for the product(s)	4	5%	1	0	3	0
U.S. competition	1	1%	0	1	0	0
Foreign competition	15	18%	1	3	7	4
Other	6	7%	1	0	4	1
Total	86	100%	25	12	27	22

fair promoters are aware of and are seeking remedies to this problem, but efforts to-date are disappointing. Clearly, the availability of such service alone, particularly to the smaller firm, is not sufficient . . . what marketing efforts might be employed to improve the situation needs to be examined.

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THE IMPACT ON ENERGY CONSTRAINTS ON ARKANSAS TOURISM

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INTRODUCTION

The purpose of this paper is to provide a framework for analysis of the impact of energy constraints on tourism. There is historical precedence for why this is important. Prior to 1973, petroleum products, one of the main sources of energy, were both relatively abundant and inexpensive. In 1973, however, the existing petroleum cartel (OPEC) gained a major degree of success in controlling the supply of petroleum and its price in the world market. That control is exemplified by the successful oil embargo during the Yom Kippur War and the major increases in the price of oil per barrel. Although a large portion of the price increases occurred during 1973 when the price per barrel went from $2.59 to $11.65, the ability to obtain higher prices has continued to the present time as indicated in Table 1. Major increases were obtained again in 1978-1979, and in fact, the rapid price rises of the recent periods are quite similar to those of 1973.

This energy constraint has influenced the growth rate, price level, unemployment rate, and balance of payments of the United States economy. With this background, the remainder of the paper is directed toward an analysis of the energy constraint on tourism in Arkansas.

TOURISM IN ARKANSAS

Tourism in Arkansas ranks as one of the major industries with an income of $940 million having been generated in 1975. In fact, tourism is currently the third major income producer in Arkansas behind agriculture and manufacturing. The data in Table 2 indicate the importance of the tourist industry within the State. Those data also reveal the impact of the gasoline price changes of 1973 on tourism because the growth in the constant dollar expenditures has been very little since that time.

Other significant figures concerning tourism reveal that out-of-state travelers account for all but approximately 2 to 3 percent of the tourism impact in Arkansas. The origins of most of those travelers were the surrounding states with the actual rankings, of the states of origin, in descending order, being Texas, Illinois, Missouri, Oklahoma, Tennessee, and Louisiana.

Any national plan which acts to restrict the use of gasoline by the transportation sector will have a major impact upon travel. Business trips diminish in favor of telephone contacts. With respect to vacation plans, the impact is more severe since 23 percent of individuals not planning on taking a vacation in 1974 listed gasoline shortages as a reason. More importantly, 32 percent of those planning on taking an automobile vacation indicated that they would cancel it if gasoline reached too high a price (one dollar per gallon). The above indicates that changes in the availability and price of gasoline will substantially alter the travel patterns of Americans in general and that Arkansas will be more affected than will be those vacation areas located near large population bases. This is summed up in the following statement: "Since the tourist industry is particularly significant in

Table 1

PRICE PER BARREL OF LIGHT ARABIAN CRUDE OIL

August 31, 1970	$ 1.80
February 15, 1971	2.18
June 1, 1971	2.28
January 20, 1972	2.48
January 1, 1973	2.59
April 1, 1973	2.74
August 1, 1973	3.07
October 5, 1973	5.12
January 1, 1974	11.65
December 20, 1978	12.90
December 1, 1979	21.53
December 20, 1979	24.00 to 30.00 est.

Source: Petroleum Industry Research Foundation.

Table 2

ANNUAL TOURIST EXPENDITURES

Year	People	Expenditures Current Dollars (000)	Expenditures 1972 Dollars (000)	Change 1972 Dollars (%)
1971	16,350	$ 540,149	$ 562,538	--
1972	16,937	630,935	630,934	+ 12.2
1973	18,176	735,903	695,560	+ 10.2
1974	19,341	840,223	724,205	+ 4.1
1975	21,198	940,197	739,439	+ 2.1
1976	21,197	1,007,891	753,788	+ 1.9
1977	24,108	1,085,000	765,702	+ 1.6

Source: Arkansas Department of Parks and Tourism, Annual Reports.

the Arkansas Economy and is, furthermore, strongly oriented to campers' and vacationers' making short visits to widely dispersed areas, a fuel shortage could cause a rather profound impact on this segment of the state's economy."[1] This means that the tourist industry in Arkansas would be at a competitive disadvantage since it relies upon visits to rather remote vacation sites by out-of-state travelers. This will be particularly true in the future as increased prices of recreational vehicles will further limit this segment of the visitor market.

ENERGY AND TOURISM IN ARKANSAS

Additional evidence of the importance of adequate energy supplies to the tourist industry in Arkansas is provided by the data in Tables 3 and 4. Table 3 figures indicate the visits to National Park Service Areas in Arkansas. As can be seen from Column 3, 1973 saw a decline of 9.8 percent, followed by another decline of 0.8 percent in 1974 as individuals reacted to the "energy crisis" of 1973. At the same time, however, as indicated in the next four columns, the numbers of overnight visits and of tent and trailer camper days increased significantly. For overnight visits, the increase for 1973 was 35.2 percent and for 1974, it was 169.6 percent. For tent and trailer camper days, 1973 saw an increase of 30.5 percent and 1974, a 150.3 percent increase. It would appear that people did not do as much visiting but did extend their visits through overnight stops and camping. In other words, vacations were more destination-oriented with tourists staying in one location for longer periods instead of driving more distance and thereby using more gasoline. Table 4 data indicate a similar pattern of travel for the state parks of Arkansas as total visits fell in 1973 by 2.3 percent but campground activity went up 11.5 percent. Once again the importance of tourism in Arkansas is noted but, at the same time, the impact of inflation on the statistics is unmistakable.

CAMPING IN ARKANSAS

Travel trailers and self-propelled campers account for over 50 percent of all camping. Truck campers were the next most popular with some 30 percent of all campers. Tent camping was least popular accounting for less than 20 percent of all camping. The popular myth of "roughing it" appears to be a fallacy in Arkansas; but, more important, it is also apparent that the camper in Arkansas is heavily reliant upon a vehicle which traditionally provides very poor performance with respect to fuel mileage.

Additional studies conducted by the Arkansas Department of Parks and Tourism have revealed that the general characteristics of visitors include the following:

1. Many Arkansas tourists are above the age of 45.
2. Annual family income generally is distributed in the ranges of $10,000-$15,000, above $20,000, and of $5,000-$10,000, in that order.
3. Educational levels are in almost all cases high school or above.
4. Most Arkansas visitors are from the neighboring states, the Midwest, or the East.
5. Arkansas tourists return time-after-time and there seems to be fairly good attraction for the untapped tourist market. A general length of stay is between one and five days.
6. Sightseeing, cultural activities, and camping appear to be the more popular tourist activities.
7. Automobiles or auto-trailer combinations are the principal means of tourist transportation in the State.
8. Tourist satisfaction with facilities is generally favorable.
9. Tourists' evaluations of people with whom they come in contact while vacationing in Arkansas are generally favorable.

It is evident that the economy of Arkansas is greatly influenced by tourism and that tourism, in turn, is greatly influenced by the availability and price of energy. It follows, therefore, that the economy in Arkansas is going to be greatly influenced by national policy dealing with energy.

Whereas, proposed national energy plans deal with all aspects of the energy problem, this paper confines itself to those aspects related to petroleum. In this regard, the expected impact on the transport sector is quite severe since most proposals call for holding gasoline consumption to an annual average growth rate of only 1.1 percent over the 1976-1985 period. To meet that goal will require severe restriction since gasoline consumption in the U.S. has increased an average of 3.4 percent a year over the last three years. Of additional importance is the fact that the growth rate has been higher in many western states, particularly those with sizable tourist industries. Arkansas falls in the lower portion of those States with average growth rates as can be seen in Table 5.

Table 3

VISITS TO NATIONAL PARK SERVICE AREAS IN ARKANSAS
(000's of Visits)

Year	Total Visits	Percent Change	Overnight Visits	Percent Change	Camper Days Tent & Trailer	Percent Change
1965	1,947.1	--	37.4	--	37.3	--
1966	2,077.3	6.7	38.5	2.9	38.5	3.2
1967	2,232.5	7.5	40.3	4.7	40.3	5.8
1968	2,144.5	- 3.9	38.1	- 5.5	38.1	- 5.5
1969	2,100.0	- 2.1	34.9	- 8.4	34.9	- 8.4
1970	2,356.0	12.2	33.4	- 4.3	33.4	- 4.3
1971	2,828.8	20.1	21.6	- 35.3	21.6	- 35.3
1972	3,064.0	8.3	23.6	9.3	23.6	9.3
1973	2,762.4	- 9.8	31.9	35.2	30.8	30.5
1974	2,741.3	- 0.8	86.0	169.6	77.1	150.3
1975	3,944.4	43.9	95.3	10.8	86.7	12.5
1976	5,317.9	34.8	99.8	4.7	59.8	- 31.0

Source: Business Research Division, University of Colorado, *Travel Trends in the United States and Canada, 1978 Ed.;* (Boulder, CO 1979).

Table 4

VISITS TO STATE PARKS AND SIMILAR AREAS IN ARKANSAS 1965-1976
(000's of Visits)

Year	Total Visits	Percent Change	Total Visits To National Forests	Percent Change	Recreational Visits To Campground In National Forests	Percent Change
1965	6,277.9	--	1,468.8	--	325.3	--
1966	N.A.	--	1,263.4	- 14.0	215.8	- 33.7
1967	N.A.	--	1,510.6	19.6	226.0	4.7
1968	N.A.	--	1,654.1	9.5	256.2	13.4
1969	N.A.	--	2,019.0	22.1	311.2	21.4
1970	15,225.0	--	2,216.0	9.8	336.5	8.1
1971	16,350.0	7.4	2,702.9	22.0	361.1	7.3
1972	16,937.4	3.4	2,831.1	4.7	359.8	- 0.4
1973	18,176.4	7.3	2,765.8	- 2.3	401.0	11.5
1974	19,341.2	6.4	2,924.5	5.7	433.2	8.0
1975	21,197.9	9.6	3,219.7	10.1	416.8	- 3.8
1976	22,725.0	7.2	2,894.8	- 10.1	392.3	- 5.9

Source: Business Research Division, University of Colorado, *Travel Trends in the United States and Canada, 1978 Ed.,* (Boulder, CO 1979).

Table 5

AVERAGE ANNUAL GROWTH (%) IN GASOLINE CONSUMPTION, 1976-1978

High		Average		Low	
Nevada	8.5	Oregon	4.3	Ohio	2.4
Colorado	6.7	Idaho	4.2	Pennsylvania	2.2
Wyoming	6.7 1	North Carolina	4.2	West Virginia	2.2
Arizona	6.4	Indiana	4.0	Maine	1.8
Montana	5.8	New Mexico	4.0	New Jersey	1.8
California	5.4	South Carolina	4.0	Michigan	1.7
Washington	5.1	Alabama	3.8	North Dakota	1.7
Oklahoma	4.8	Minnesota	3.8	Connecticut	1.6
Florida	4.7	Virginia	3.8	Massachusetts	1.5
Hawaii	4.7	Tennessee	3.7	Iowa	1.3
Illinois	4.7	Maryland	3.6	Nebraska	1.2
Texas	4.6	New Hampshire	3.6	New York	0.2
Louisiana	4.4	Georgia	3.5	Kansas	- 0.04
		Mississippi	3.5	Delaware	- 0.2
		Arkansas	3.0	Alaska	- 1.1
		Rhode Island	3.0	Utah	- 1.7
		Vermont	3.0	D.C.	- 2.0
		Wisconsin	3.0		
		Kentucky	2.8		
		Missouri	2.7		
		South Dakota	2.6		

Source: American Petroleum Institute.

IMPACT OF HIGHER GASOLINE PRICES ON ARKANSAS TOURISM

It still remains to be determined just how much of an impact will be felt from the increased costs of recreational vehicles (gas-guzzlers) and of gasoline. However, some quantification is possible, since price elasticities are available for the private demand for gasoline. "The short-run impact of changes in energy prices is rather modest. Over the long run, however, elasticity of demand for primary energy sources–crude petroleum . . .–means that a 10 percent increase in the price of energy results in a 3 or 4 percent decrease in energy demand."[2] Although, the demand for gasoline appears relatively inelastic, it indicates nonetheless that price changes will bring about conservation results, particularly once time is allowed for changes to occur. In the long-run, there will be replacement of vehicles and changes in lifestyles as consumers' demand for gasoline responds to changes in price. If one takes the figures of -0.3 to -0.4 as being representative of the price elasticity, then this means that there will be fairly large curtailments. At the current time, in Arkansas the price of gasoline is approximately $1.25 per gallon. Therefore, if the price goes to $2.00 per gallon, as is expected, the 75 cent increase in price, a 60 percent rise, implies a reduction in the long-run gasoline demand of approximately 18 to 24 percent.

It should be pointed out that total transportation demand is projected to grow only 1.1 percent as an annual average. It would furthermore seem that the demand by the transportation industry will expand at the expense of the private automobile demand. This implies that vacations in remote areas should decline drastically, particularly if the remote areas are located some distance from population centers. All of the above information indicates that the travel or tourist industry should suffer a major decline in the future as higher energy costs in the form of rising gasoline prices occur.

Another major implication for tourism in Arkansas is the "half a tank" vacation where visitors are in reality more afraid of shortages, or lack of gasoline, than of higher prices. As pointed out earlier, most of Arkansas' tourists come from neighboring states, but in most cases, the origins are more than half a tank of gasoline away. Therefore, future travelers may increasingly fly to visit Disneylands, etc., and be less prone to drive to remote vacation areas such as those offered in Arkansas.

CONCLUSIONS

In any event, some conclusions are apparent. The obvious one is that tourism will be severely affected through not only higher gasoline prices but also increased costs of recreational vehicles. Consequently, Arkansas and other States dependent upon private automobile accessibility will suffer more than other vacation areas. Those tourists who do travel will be seeking places to spend longer visits and will be less inclined to bring with them their own shelter as they travel. Thus, as a minimum, not only the quantity of tourism may change but also its character.

TRENDAND CHI-SQUARE ANALYSES OF PLANT LOCATION FACTORS INFLUENCING FOREIGN MANUFACTURING INVESTORS IN THE UNITED STATES

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INTRODUCTION

> Foreign investment in the United States is a phenomenon of this decade that shows every sign of continuing in the 1980s. Foreign investors see in the U.S. the magic combination of political stability and a marketplace that is large, dynamic, and sophisticated. The U.S. government encourages foreign investment because it provides capital for American Industry, creates jobs, and brings in new tax dollars. Skilled labor is plentiful, the currency exchange rate is favorable to foreigners with dollars, and in recent years many foreign exports have lost their competitive edge to U.S. products.[1]

That statement, published in Peat, Marwick, Mitchell & Co.'s quarterly *World,* suggests that inward foreign investment can have a positive impact on the U.S. economy, and that more foreign investors can be expected to come to this country during the next decade;also, a very recently-completed Conference Board survey indicated that "foreign investment activity in U.S. manufacturing appears to be continuing at a high level."[2]

Although a goodly number of books and articles have been written on locational theories, plant location decisions, and foreign investment,[3] there appears to be a lack of in-depth knowledge of plant location decisions of foreign manufacturing investors in the United States. The purpose of this paper is (1) to report the results of research designed to examine changes in the importance of the underlying factors (or dimensions) of 32 plant location variables in the eyes of foreign manufacturing investors in the U.S. over a 17-year period (1961-1977), and (2) to explore the relationships between these plant location factors and certain characteristics of foreign manufacturing investments in the U.S.[4] Those characteristics are (1) size (number of employees) of the foreign manufacturing plant, (2) percentage of foreign ownership in the manufacturing firm in the U.S.,[5] (3) nationality of the foreign manufacturing investor, (4) region of the U.S. in which the plant is located, and (5) industry to which the plant belongs.

METHODOLOGY

A mail survey was conducted in late 1977 to collect primary data from all of the foreign manufacturers in the U.S. Three sources were used in compiling the mailing list: (1) the *Directory of Foreign Manufacturers in the United States,*[6] (2) the *Foreign Direct Investors in the United States,*[7] and (3) the economic development agencies of U.S. state governments. Questionnaires were sent to 1,147 foreign manufacturing investors in the U.S.; and after a second mailing, 254, or 22 percent, provided usable responses.

The questionnaire was composed of two sections. The first section was used to gather classification information. In the second section, to determine the importance of each of the 32 plant location variables which might have influenced their plant location decisions in the U.S., respondents were asked to rate each on a five-point scale, with "not at all important" designated as 1 point; "slightly important," 2; "moderately important," 3; "very important," 4; and "extremely important," 5.

A factor analysis revealed the presence of eight factors underlying the 32 plant location variables. The result is summarized in Table 1.[8] The eight factors were used in the subsequent analysis, with each plant location variable weighted on the basis of the square of its factor loading in determining mean importance ratings for the factors.[9]

FINDINGS

Analysis of trends. A major objective of this study was to examine for the 17-year period (1961-1977) the change, if any, in the importance of the plant location factors, at the time when the plant location decision was made by foreign investors in the U.S.

A regression analysis was performed with the year of the plant location decision as the independent variable, scaled as 1961=1 through 1977=17, and the importance of each factor as the dependent variable. The purpose of this was to examine the slopes of the trend lines, rather than to attempt to explain a significant variation in the dependent variable (importance of a factor). Figures 1 and 2 show the change, if any, in the importance of each factor over time.

The importance of tax rates and of cost and availability of local capital decreased over time. This observation indicated that these two factors are gradually becoming less decisive, perhaps because they are more easily available. For the same period, increases were observed in the importance of import-export considerations; availability of trained personnel; community environment; nearness to supply sources and markets; suitable land and transportation services; and attitudes of government and people, labor conditions, and utilities. The majority of the changes in the importance of the factors, except for one, were not significant at the 0.10 level of significance. However, a significant and positive trend was observed for that one factor—the importance of attitudes of government and people, labor conditions, and utilities ($B = 0.048$, $\alpha = 0.002$).[10] That result is not surprising in view of the socioeconomic trends and the increasing scrutiny with which business is faced in this country.

Analysis of relationships. In order to explore the relationships between the plant location factors and the characteristics of foreign manufacturing investments in the U.S., five sets of hypotheses were developed and statistically tested. They are:

H_0, set 1: The importance of a plant location factor is dependent on the employee size of the foreign manufacturing plant in the U.S.[11]

H_0, set 2: The importance of a plant location factor is dependent on the degree of foreign ownership in the manufacturing firm in the U.S.[12]

H_0, set 3: The importance of a plant location factor is dependent on the nationality of foreign manufacturing investors in the U.S.[13]

H_0, set 4: The importance of a plant location factor is dependent on the region (in the U.S.) of foreign plant location.[14]

H_0, set 5: The importance of a plant location factor is dependent on the industry to which the foreign manufacturer belongs.[15]

All hypotheses were tested using Chi-Square analysis at a significance level of 0.10.[16] The results are summarized in Table 2.

A significant association was found between the employee size of the foreign manufacturing plant in the U.S. and the importance of "availability of trained personnel" ($\alpha = 0.008$). The larger-sized foreign manufacturing operations tend to give a higher importance rating to this factor. (H_0, set 1)

Table 1

RELATIONSHIPS BETWEEN FACTORS AND PLANT LOCATION VARIABLES

Factor	Plant Location Variable	Factor Loading[a]
1. Attitudes of government and people, labor conditions, and utilities	Attitudes of government officials	0.66489
	Attitudes of local citizens	0.65218
	Labor attitudes	0.64126
	Labor laws	0.62346
	Salary and wages	0.59897
	Availability of unskilled labor	0.48331
	Cost of utilities	0.47391
	Availability of utilities	0.46810
	Government incentives	0.45473
2. Cost and availability of local capital	Cost of local capital	0.90450
	Availability of local capital	0.88725
3. Suitable land and transportation services	Availability of suitable plant sites	0.73274
	Cost of suitable land	0.68546
	Ample space for future expansion	0.61370
	Cost of construction	0.55203
	Availability of transportation services	0.51202
	Cost of transportation services	0.44414
4. Community environment	Education facilities	0.84553
	Housing facilities	0.80710
	Police and fire protection	0.62315
	Climate	0.47875
5. Nearness to supply sources and markets	Proximity to suppliers	0.65252
	Proximity to raw material sources	0.59896
	Nearness to markets within the U.S.	0.33933
6. Availability of trained personnel	Availability of managerial and technical personnel	0.70093
	Availability of skilled labor	0.58821
7. Tax rates	Local tax rates	0.74515
	State tax rates	0.71324
8. Import-export considerations	Facilities for importing and exporting	0.50431
	Nearness to operations in a "third country"	0.42894
	Nearness to home operation	0.31844
	Proximity to export markets (outside the U,S.)	0.31669

[a] The factor loading is a measure of correlation between a variable and a factor.

Table 2

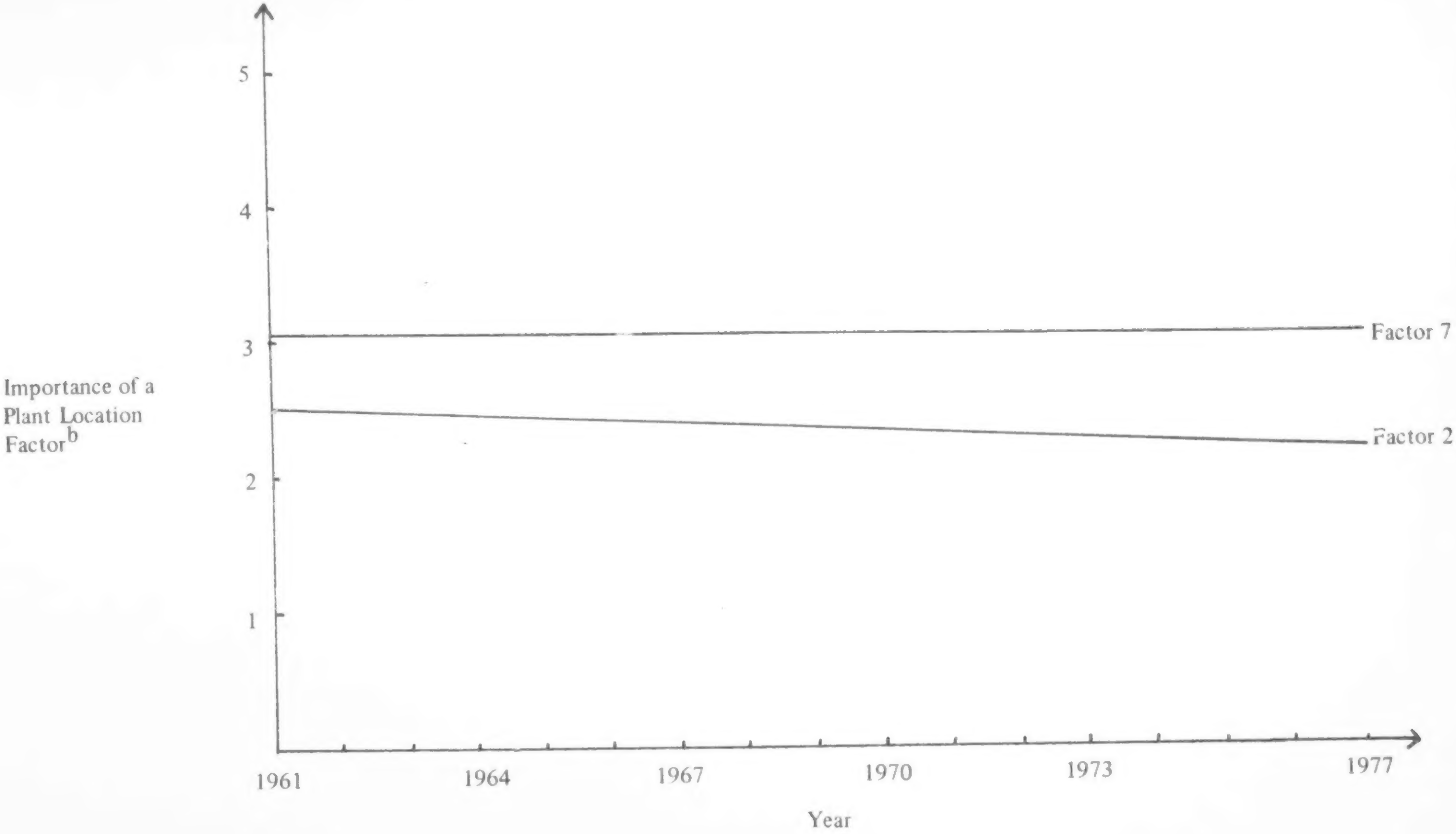
SUMMARY OF HYPOTHESIS-TESTING RESULTS[a]

Factor	Hypothesis Importance of a plant location factor is dependent on:				
	Employee size (set 1)	Degree of foreign ownership (set 2)	Nationality (set 3)	Region (set 4)	Industry (set 5)
1. Attitudes of government and people, labor conditions, and utilities			S		
2. Cost and availability of local capital		S			S
3. Suitable land and transportation services					
4. Community environment					
5. Nearness to supply sources and markets		S		S	S
6. Availability of trained personnel	S				
7. Tax rates		S			
8. Import-export considerations				S	

[a] Only the significant results are indicated in the table.

Figure 1

"BEST-FIT" REGRESSION LINES SHOWING DECLINE IN IMPORTANCE OF CERTAIN PLANT LOCATION FACTORS[a]

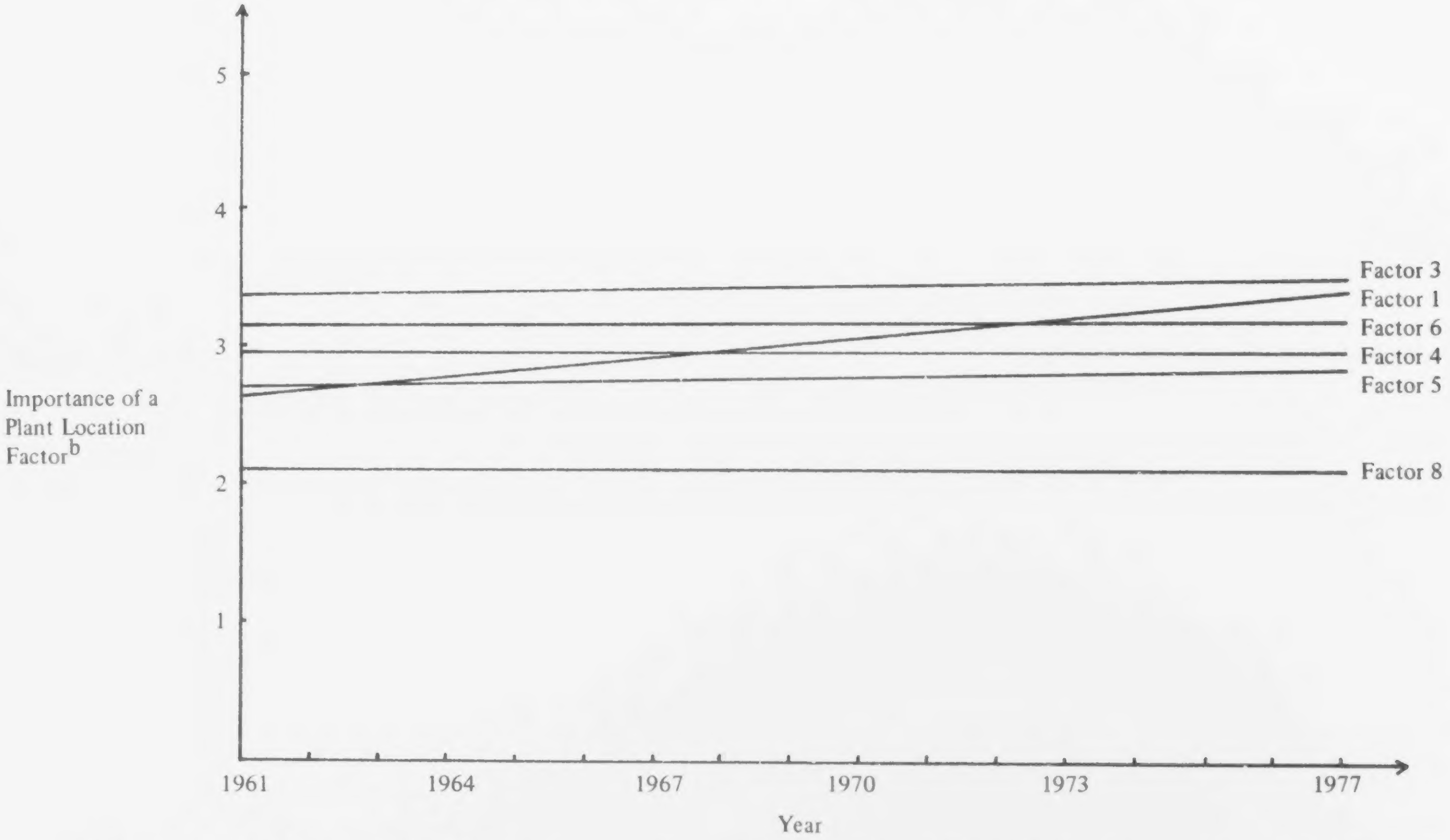


[a] Factor 2=Cost and availability of local capital; Factor 7=Tax rates.

[b] 1=Not at all important; 2=Slightly important; 3=Moderately important; 4=Very important; and 5=Extremely important.

Figure 2

"BEST-FIT" REGRESSION LINES SHOWING INCREASE IN IMPORTANCE OF CERTAIN PLANT LOCATION FACTORS[a]



[a] Factor 1=Attitudes of government and people, labor conditions, and utilities; Factor 3=Suitable land and transportation services; Factor 4=Community environment; Factor 5=Nearness to supply sources and markets; Factor 6=Availability of trained personnel; and Factor 8=Import-export considerations.

[b] 1=Not at all important; 2=Slightly important; 3=Moderately important; 4=Very important; and 5=Extremely important.

The degree of foreign ownership in the manufacturing firm in the U.S. was found to be associated with the importance of:

(1) Cost and availability of local capital ($a=0.036$),

(2) Nearness to supply sources and markets ($a=0.087$), and

(3) Tax rates ($a=0.010$)

The greater the degree of foreign ownership in the manufacturing firm in the U.S., the less important these three factors were in the plant location decision. (H_0 , set 2)

The importance of "attitudes of government and people, labor conditions, and utilities" was found to be connected with the nationality of foreign manufacturing investors in the U.S. ($a=0.035$). The corresponding Japanese firms tend to place significantly greater importance on this factor than their European and Canadian counterparts. (H_0 , set 3)

Significant associations were found to exist between the region of foreign plant location (in the U.S.) and the importance of:

(1) Nearness to supply sources and markets ($a=0.004$)

(2) Import-export considerations ($a=0.083$)

These two factors appeared to be more important to those foreign plants located in the Pacific region than to those located in eastern or central states. (H_0 , set 4)

The industry to which the foreign manufacturer belongs was found to be related to the importance of:

(1) Cost and availability of local capital ($a=0.087$)

(2) Nearness to supply sources and markets ($a=0.050$)

"Cost and availability of local capital" tended to be valued more by foreign manufacturers in the fabricated metal, industrial machinery, and electrical machinery industries while "nearness to supply sources and markets" tended to receive a higher importance rating from foreign firms in the chemical industry. (H_0 , set 5)

SUMMARY AND FINAL NOTES

Since the early 1970s, foreign direct investments in this country have increased dramatically. These inward foreign direct investments, under proper regulation and guidance, can serve as a positive force to the continuing development of the U.S. economy. This study provided useful information on the trending of the importance of eight plant location factors (Figures 1 and 2) and on how the importance of these plant location factors relates to different characteristics of foreign manufacturing investments in the U.S. (Table 2). The findings reported in this paper may broaden our general understanding of plant location decisions of foreign manufacturing investors in the U.S. and should be of particular interest to this nation's economic development organizations.

The applications of factor, trend, and Chi-Square analyses to international manufacturing investment activities have been demonstrated. Some business and economic researchers may have special interest in this technical aspect of the study.

If the value of the U.S. dollar keeps declining in the world currency market, more and more foreign investors are going to find it is desirable to invest in this country. To make sure that this relatively new thrust of inward investment is beneficial to the U.S. economy will require more research on the relevant topics.

FOOTNOTES

[1] Jerry G. Bowles, ed., "Project USA," *World*, Summer, 1979, p. 18.

[2] "Foreign Investment in U.S. Industry Found to be Strong," *Wall Street Journal*, May 10, 1979, p. 4.

[3] See, for example, Melvin L. Greenhut, *Plant Location in Theory and in Practice* (Chapel Hill, North Carolina: The University of North Carolina Press, 1956); George M. McManmon, *A Survey of the Literature on Industrial Location* (New York: Business Research Center, Syracuse University, 1959); E. W. Miller, *A Geography of Industrial Location* (Dubuque, Iowa: Wm. C. Brown Company Publishers, 1970); David M. Smith, *Industrial Location* (New York: John Wiley & Sons, Inc., 1971); Peter M. Townroe, *Planning Industrial Location* (London: Leonard Hill Books, 1976); Mira Wilkins, *Foreign Enterprise in Florida* (Miami: University Presses of Florida, 1979); U.S. Department of Commerce, *Foreign Direct Investment in the United States* (Washington, D.C.: U.S. Government Printing Office, 1976); Jeffrey S. Arpan and David A. Ricks, "Foreign Direct Investments in the U.S. and Some Attendant Research Problems," *Journal of International Business Studies*, Spring, 1974, pp. 1-7; John D. Daniels, *Recent Foreign Direct Manufacturing Investment in the United States* (New York: Praeger Publishers, Inc., 1971); Hans Schollhammer, *Locational Strategies of Multinational*

Firms (Los Angeles: Center for International Business, Pepperdine University, 1974); Bernard M. Bass, Donald W. McGregor, and James L. Walters, "Selecting Foreign Plant Sites: Economic, Social and Political Considerations," *Academy of Management Journal,* Vol. 20, No. 4, December, 1977, pp. 535-51.

[4] The list of plant location variables was developed based on an extensive review of relevant literature; Hsin-Min Tong, *Plant Location Decisions of Foreign Manufacturing Investors* (Ann Arbor: UMI Research Press, 1979), pp. 15-32. Several plant location factors included in this research were used by Professor Schollhammer in his locational study; Schollhammer, *Locational Strategies of Multinational Firms.* For additional information, see, for example, Robert B. Stobaugh, Jr., "How to Analyze Foreign Investment Climates," *Harvard Business Review,* September-October, 1969, pp. 100-108; the Conference Board, Inc., *Foreign Investment in the United States: Policy, Problems and Obstacles* (New York: The Conference Board, Inc., 1974); and "Benchmarks for Site Selection," *Distribution Worldwide,* December, 1976, pp. 36-39.

[5] The term "foreign manufacturing investors" in this study refers to manufacturing firms which have at least one plant in the U.S. and of whose ownership 10 percent or more belongs to non-Americans. The use of "10 percent" as a cut-off point is consistent with the definition of foreign direct investment currently used by the U.S. Department of Commerce; U.S. Congress, House, *International Investment Uncertainty,* 94th Cong., 2nd sess. (Washington, D.C.: U.S. Government Printing Office, 1977), p. 18.

[6] Jeffrey S. Arpan and David A. Ricks, *Directory of Foreign Manufacturers in the United States* (Atlanta: School of Business Administration, Georgia State University, 1975). A 1979 edition of this directory is available now.

[7] U.S. Department of Commerce, *Foreign Direct Investors in the United States* (Washington, D.C.: U.S. Government Printing Office, 1976).

[8] When there is a relatively large number of variables which affect an individual's or an institution's behavior, it is often appropirate to find out the basic dimensions underlying these variables. In social psychologist Dr. Jean Stoetzel's words, ". . . there is a need for a deeper knowledge of their (the relatively large number of variables') roots;" Jean Stoetzel, "A Factor Analysis of the Liquor Preferences of French Consumers," *Journal of Advertising Research* 1(December 1960):7. Frederick Williams further explained, ". . . (this is) a more economical way to characterize the behavior that we are studying;" Frederick Williams, *Reasoning with Statistics* (New York: Holt, Rinehart and Winston, Inc., 1968), p. 153. For additional information, see William F. Massy, "Applying Factor Analysis to a Specific Marketing Problem," *Proceedings of the American Marketing Association Conference,* 1964, pp. 291-307; William D. Wells and Jagdish N. Sheth, "Factor Analysis in Marketing Research," in *Handbook of Market Research,* ed. Robert Ferber (New York: McGraw-Hill Book Company, 1971).

[9] The factor loading is a measure of correlation between a plant location variable and a factor; the square of the factor loading is the coefficient of determination—an actual measurement of strength of relationship. See Frederick Williams, *Reasoning with Statistics,* p. 134, and Norman H. Nie, et al., *Statistical Package for the Social Sciences,* 2nd ed. (New York: McGraw-Hill Book Company, 1975), p. 279.

[10] B, the regression coefficient, is the slope of the regression line. α is the level of significance.

[11] The foreign manufacturing plants were divided, according to employee size, into three groups. A "small" plant had 99 or less employees, a "medium-sized" plant 100-499, and a "large" plant 500 or more.

[12] The foreign manufacturing investors were divided, according to percentage of foreign ownership in the firm, into four categories. The "low" foreign ownership category was associated with 10-24 percent foreign ownership in the firm, the "lower-medium" category 25-49 percent, the "upper-medium" category 50-74 percent, and the "high" category 75-100 percent.

[13] The foreign manufacturing investors were divided, according to their nationality, into three groups: European, Japanese, and Canadian.

[14] The United States was divided, according to the standard breakdown adopted by the U.S. Department of Commerce, into three regions: Eastern, Central, and Pacific.

[15] Only the data from those foreign manufacturers who are in either chemicals or fabricated metals or industrial machinery or electric machinery industry were used in testing this set of hypotheses.

[16] Due to the nature of the study, a significance level of 0.10 was used, instead of the more conventional 0.05. This level (0.10) is consistent with that advocated by Labovitz who challenged the use of the 0.05 level; Sanford Labovitz, "Criteria for Selecting a Significance Level: A Note on the Sacredness of 0.05," *The American Sociologist,* August, 1968, pp. 220-22.

THE EFFECTS OF PENSION REFORM ON PRIVATE RETIREMENT PLANS IN ARKANSAS

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INTRODUCTION

Private retirement plans are currently experiencing many and varied problems but remain an important aspect of the economy. Problem areas include costs, employee demands, inflation, and demographic changes.

The costs to administer private retirement plans are constantly increasing, not only in absolute dollar value but also as a percentage of corporate profits. These increased costs result from a number of simultaneously occurring factors–the major one being rising expectations and demands of employees, primarily, for increased benefits. A second important factor is inflation, which not only drives up salaries and pension costs, but, at the same time, also decreases the real asset value of pension portfolios. A third factor can be traced to certain demographic changes, such as longer life span. As the expected life span increases in our society, workers will drain more pension benefits from corporate profits, thus adding a further burden to funding techniques.[1]

In the past, when corporations found that the financial burden of their pension plans was too much to bear, they merely terminated their retirement plans without any legal obligation for undefined benefits. A case in point was the shutdown of the Studebaker Corporation which left thousands of vested employees without a penny of benefits, primarily, because of generous provisions with no asset backing.[2]

To help alleviate that condition, Congress, in 1974, passed the Employment Retirement Income Security Act (ERISA)–in summary, this was an effort to assure employees that their private retirement plans would provide them with a source of retirement income. In so doing, this law has resulted in some of the most important changes ever enacted in the private pension movement. These changes affect private retirement plans along a broad front including legal, tax, and actuarial areas.

The law requires that every private retirement plan (profit sharing excluded) must pay insurance premiums to the Pension Benefit Guaranty Corporation. This self-financing agency assures that promised benefits will be paid even if a plan terminates without sufficient assets.[3] Additionally, ERISA stipulates that some two million private retirement plans must file detailed plan descriptions and annual reports with the Department of Labor and disclose a variety of information to plan participants. Of great importance in ERISA is its expansion of the definition of *fiduciary* so that almost everyone who has administrative or managerial responsibility for a retirement fund must assume liability.[4]

On the surface, ERISA may seem like a proper solution for both employers and employees in the assurance of a reliable source of retirement income for vested workers; but compliance with the rules of ERISA has become a burden to many employers and may be the cause of a large number of private retirement plan terminations.

This paper will present the results of a study conducted to analyze the impact of ERISA on small private retirement plans in Arkansas.

DEFINITION OF MAJOR TERMS

Small Retirement Plan – A retirement plan that covers 100 or less participants.

Pension Plan – The term is interpreted as applicable to a plan that has "defined benefits." This means that the benefits a participant will receive upon retirement can be determined from some formula in the plan instrument.

Profit Sharing – This encompasses all plans that have "defined contribution." This means that the plan instrument provides some formula for determining the amount of the employer's annual contribution.

To avoid confusion, the word "plan," as used throughout this paper, can refer to a pension, a profit-sharing plan, or to both.

GOALS OF THE STUDY

This study was conducted to determine the extent that ERISA has affected terminations of pension and profit-sharing plans in Arkansas. In addition, the research sought to identify if ERISA was instrumental in causing the switch of funding agencies for pension and profit sharing plans or the turn over of pension and profit sharing funds to trust administrators. Among other things, the project included: (1) an effort to analyze composite increases in internal and external plan administration costs since passage of ERISA, and (2) an investigation of changes in the portfolio structure of private retirement plans to determine if those changes were more reflective of ERISA or of the investment environment.

BACKGROUND OF THE STUDY

The study was conducted in 1979. Information was drawn from the three basic sources discussed below.

First, the current literature was surveyed for a perspective on modern attitudes regarding the effects ERISA has had on small pension/profit sharing plans throughout the United States. Previous studies uncovered by the literature review were brief and did not necessarily provide conclusive results but did bring out difficulties that were pursued in the present study.

Second, an indepth analysis was made of the official logs of the Department of Labor and the Pension Benefit Guaranty Corporation to determine what effects ERISA had had on the terminations of private pension/profit sharing plans in Arkansas during the years 1974-1978.

Third, two statewide surveys were conducted: (1) a mail survey with a selected sample of pension/profit sharing plan sponsors, and (2) a similar survey with a sample of pension practitioners. In conjunction with the pension practitioner survey, personal interviews were held with pension practitioners in order to gain some personal insights regarding the problems of ERISA in Arkansas.

ANALYSIS OF DATA

The literature review revealed that massive terminations occurred nationwide among private pension plans at the outset of ERISA. However, plan closures have leveled off in the recent past (1977-1979). The findings of this study did not coincide with conclusions of earlier research. In Arkansas, there was only a slight increase in plan terminations–0.4% compared with the national average of 18%. Since enactment of ERISA, pension plan closures have been relatively stable–averaging, each year, only 1% of the total plans in Arkansas; explanations for this very low rate of terminations cannot be readily ascertained.

It was the finding of this researcher that although ERISA was primarily responsible for the 1% annual termination rate, such a low figure has had little overall impact on private pension plans in the State.

Concomitant with the research on pension plan terminations, previous studies have indicated ERISA was a primary causal agent for numerous plans to switch funding agencies or to entrust their pension funds to trust administrators. The chief rationale for this action was to offset the additional fiduciary responsibilities imposed by the law. Findings of this study have supported those conclusions. For example, of those Arkansas plans participating in this study, 38% switched funding agencies and 35% turned their funds over to trust administrators.

Of the plans changing funding sources, 55% of the sponsors specified ERISA as the primary cause for the change. Of the plans turning their funds over to trust administrators, 71% assigned responsibility for the action to ERISA's two major points–compliance standards and fiduciary responsibility. With respect to both switching funding sources and involving trust administration, it must be concluded that ERISA did have a marked impact on Arkansas plans.

Findings of the present study also coincide with those of previous research which illustrated that the cost of administering a private pension plan has increased dramatically since passage of ERISA. However, these increased cost figures are in nominal terms and may be in part due to the high inflation rate of the 1973-1979 period. Thus, GNP deflators were used to determine real cost increases. After deflation of cost increases for Arkansas plans, it was discovered that real costs increased substantially at the beginning of ERISA's applicability. The initially large increases can be traced to the cost associated with revising a plan and the frequent necessity for revision to be in compliance with the strict requirements of the Act.

Administrative cost increases in the later years were small and can be explained by the additional expense incurred by the growing assets of pension plans.

CONCLUSIONS

A significant conclusion drawn from this research involves changes in the portfolio structure of retirement plans during the period 1973-1979. Such changes were found to be significant among the sponsors of plans in this survey. However, changes were primarily caused by the conditions in the economy rather than ERISA. Due to turbulent economic conditions in the 1970s. pension plan sponsors changed the structure of the portfolios in order to maximize the wealth of these portfolios. Those actions follow a pattern markedly similar to those taken by other investors during the same period.

A final conclusion came from the results of the pension practitioner survey coupled with their personal comments. The practitioners were in full agreement with the administrative cost information gained from the employer survey. In other words, the greatest sponsor costs occurred when the law first became applicable. Initially, there was a massive scramble to revise plans to meet the requirements of the Act; therefore, both internal costs, those within the firm, and external costs, fees paid to a practitioner, greatly increased. The largest portion of the sponsor's dollar went toward initial compliance adjustment. However, after the pension industry adapted to the new requirements, the costs of sponsorship leveled off, currently increasing at a rate equal to the overall growth of assets of pension/profit sharing plans.

FOOTNOTES

1. W.B. Werther, "Flexible Compensation Evaluated," *California Management Review*, Fall, 1976, pp. 40-46.

2. Ibid., p. 43.

3. "Here Comes ERISA," *Institutional Investor*, March, 1977, pp. 273-275.

4. Ibid., p. 274.

SOURCES OF GROWTH IN ARKANSAS PERSONAL INCOME

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Over the five-year interval from 1973 to 1978, the total personal income of Arkansas residents grew by $5,610.2 million, or 72.2 percent. This represented a compounded annual growth rate of 11.5 percent and produced an average annual growth in total personal income of $1,112.0 million. For this same period, inflation registered 42.2 percent as measured by the deflator for Personal Consumption Expenditures. In other words, prices rose at a compounded annual rate of 7.3 percent. Thus, the economy of Arkansas enjoyed an average annual real growth of over four percent between 1973 and 1978. (It should be noted that, because the population of the state also grew during the time interval, that growth does not mean that individual Arkansans enjoyed an average annual increase of four percent in income.)

While the recessionary nature of 1975 is evident from the small amount of growth in personal income in that year, it is reflected even more clearly by the relatively low growth in income flowing from the private nonfarm sector (PNF). Similarly, the economic recovery enjoyed in 1976 is reflected by the expansion of the PNF sector by an amount equal to almost 86 percent of the growth in personal income.

Farm income (FI) fluctuated widely during the period. For example, it declined, in absolute dollar terms, during the recession year of 1975, fell to an even lower level in 1976, enjoyed a slight upturn over the 1976 level in 1977, and did not return until 1978 to a level in excess of that achieved in 1974. Thus, the farm sector did not act to offset the slow down in the PNF sector during the recession but instead depressed the level of personal income slightly in 1975 and even more in 1976; whereas, in 1978, the farm sector ranked second as a source of growth in the personal income of Arkansans.

Government wages and salaries (G); dividends, interest and rent (DIR); and transfer payments (TP) were more stable than the private nonfarm and farm sectors as sources of growth. Income originating with the first three of the listed sources tend to be contra-cyclical in character and assume larger roles, particularly TP and G, during recessionary periods. Thus, the relative importance of these sources lies in their tendencies to move in opposite directions from the FI and PNF sources as the pace of economic activity quickens or slows.

The most rapidly growing sector between 1973 and 1978 was transfer payments with an annual growth rate of 14.3 percent. In 1973, TP were 73.5 percent of the $1.5449 billion in income derived from the manufacturing sector; and, in 1978, this source was equal to 82.2 percent of the manufacturing sector's $2.6951 billion. Moreover, in 1975–in the depth of a recessionary period–transfer payments were $1.7191 billion, as compared to the $1.6678 billion in income derived from manufacturing.

While Arkansas is generally thought of as a "retirement state," income received as old age and survivors insurance payments (OASI) grew slightly less in the aggregate than transfer payments. The ratio of OASI/TP was 0.456 in 1973, 0.398 in 1975, and 0.445 in 1978. However, as a source of income for Arkansans, OASI payments rose from $517.9 million in 1973, 6.7 percent of personal income, to $986.0 million in 1978, 7.4 percent of personal income.

The second most rapidly growing source of income for Arkansans in this five-year period was dividends, interest

Table 1

SOURCES OF ARKANSAS PERSONAL INCOME
1973-1978

(Millions of Dollars)

	Year					
	1973	1974	1975	1976	1977	1978
Personal Income	7,770.3	8,836.5	9,551.9	10,442.8	11,652.9	13,380.5
ΔPI	--	+1,066.2	+ 715.4	+ 890.9	+1,210.1	+1,727.6
Sectors:						
Private Nonfarm	4,327.2	4,826.4	5,055.1	5,820.6	6,634.3	7,547.9
ΔPNF	--	+ 499.2	+ 228.7	+ 765.5	+ 813.7	+ 913.6
ΔPNF/ΔPI	--	0.468	0.320	0.859	0.672	0.529
Government	847.2	955.4	1,096.7	1,209.8	1,313.5	1,440.6
ΔG	--	+ 108.2	+ 141.3	+ 113.1	+ 103.7	+ 127.1
ΔG/ΔPI	--	0.101	0.198	0.127	0.086	0.074
Farm Income	830.7	891.2	777.3	565.6	606.2	997.4
ΔFI	--	+ 60.5	- 113.9	- 211.7	+ 40.6	+ 391.2
ΔFI/ΔPI	--	0.077	0.159	0.238	0.034	0.226
Dividends Interest and Rent	910.5	1,117.7	1,257.0	1,377.5	1,534.9	1,718.6
ΔDIR	--	+ 207.2	+ 139.3	+ 120.5	+ 157.4	+ 183.7
ΔDIR/ΔPI	--	0.194	0.195	0.135	0.130	0.106
Transfer Payments	1,136.0	1,370.9	1,719.1	1,884.2	2,035.5	2,216.1
ΔTP	--	+ 234.9	+ 348.2	+ 165.1	+ 151.3	+ 180.6
ΔTP/ΔPI	--	0.220	0.487	0.185	0.125	0.105
Residence Adjustment	20.3	14.9	10.0	9.2	5.6	3.0
ΔRA	--	- 5.4	- 4.9	- 0.8	- 3.6	- 2.6
ΔRA/ΔPI	--	0.005	0.007	0.001	0.003	0.002
Contributions for Social Insurance	301.6	340.0	363.3	424.2	477.0	543.1
ΔCON	--	+38.4	+23.3	+60.9	+52.8	+66.1
ΔCON/ΔPI	--	0.036	0.033	0.068	0.044	0.038

and rent. In growing from $910.5 million in 1973 to $1,718.6 million in 1978, DIR increased at an average annual rate of 13.6 percent. This annual growth rate was 2.1 percent higher than the increase in personal income.

Wages and salaries from the government sector actually grew at a slightly slower pace than did personal income. For the period, this sector experienced an average annual growth rate of 11.2 percent.

Other factors affecting the level of personal income include contributions for social insurance (CON) and residence adjustment (RA). For instance, contributions for social insurance expanded from $301.6 million in 1973 to $543.1 million in 1978. This is considered to be an outflow of, or reduction in, personal income and therefore, a negative source of growth. Also, residence adjustment can be either positive or negative but, in this period, there was from year-to-year a progressively smaller inflow of income from the source from 1973 through 1978.

Using the several income factors discussed above, personal income (PI), as presented in Table 1, is derived in the following manner:

$$PI = PNF + FI + G - CON + RA + DIR + TP$$

Table 2

POSITIVE GROWTH SOURCES AND THEIR RELATIVE CONTRIBUTIONS TO GROWTH IN PERSONAL INCOME

	Year				
Rank	1974	1975	1976	1977	1978
1	PNF	TP	PNF	PNF	PNF
2	TP	PNF	TP	DIR	FI
3	DIR	G	DIR	TP	DIR
4	G	DIR	G	G	TP
5	FI	--	--	FI	G

THE UNEMPLOYMENT RATE: WHAT DOES IT REALLY MEAN?

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In recent months the unemployment rate has been increasing at a rate that some consider alarming. The cost of allowing substantial unemployment to exist is very real in social, as well as personal, terms. Socially, unemployment represents output that is forgone; and therefore, there is less for us to consume because of it. One economist estimated that if all the workers who were idle and desperately seeking work in the 1930's had been employed, every community in the country could have had a new school, hospital and public library. At the same time, widespread unemployment foments social unrest. In the investigations of the ghetto riots of the late 1960's, extremely high rates of unemployment were considered a contributing, if not a dominating, factor in every case. Unemployment can have devastating effects on individuals and families. In a society in which the person is so closely identified with the job he does, the psychological impact on one's self-image and feeling of worth may be greater than the economic deprivation.

Despite these effects, some tell us that in the modern world, unemployment is not really that much of a problem anymore. Workers who are laid-off receive unemployment compensation and union strike funds, and the hard-pressed always have available the comprehensive welfare program. The rate of unemployment may not really be as bad as it seems. Approximately 4% unemployment is considered full employment because many workers will be changing jobs at any point in time. That frictional unemployment is short-term and represents no problem. Also the unemployment rate is an average and, like all averages, includes the extremes. While the unemployment rates of teenagers may be very high, the rate for "the male head-of-household category is much below the average." However, it should be pointed out that the typical male-supported household is becoming less prevalent in modern society.

If we are to determine what the unemployment rate really means, we need to understand how the statistic is compiled. Early each month, the Bureau of Labor Statistics announces the total number of employed and unemployed workers in the United States for the previous month along with many characteristics of each category. Since everyone cannot be counted each month, these statistics are estimated from a sample called the Current Population Survey. The sample of 461 areas is drawn from the 3,146 independent cities and counties in the country and includes areas from every state and the District of Columbia. The sample is designed to reflect urban and rural areas, different types of industrial and farming areas, and the major geographic divisions of the country in the same proportions as they occur in the nation. Each of these 461 areas is subdivided into enumeration districts of about 350 households each and the dwelling units to be surveyed are randomly selected from each district. Approximately 55,000 households are eligible for interview. One fourth of the households in the sample are replaced each month so that no family is interviewed more than four consecutive months. A special group of 1,000 highly trained and experienced Census Bureau workers conduct the door to door interviews. Since a sample is used for estimation, the results are not absolutely precise but we can have 90% confidence that the estimate is within 185,000 of the actual figure. With unemployment totals in the millions, this possible error is quite small and of no concern as long as we recognize that it does exist.

When the survey is completed, each individual 16 years or older who is not in the armed forces or otherwise institutionalized is classified as either employed, unemployed, or not in the labor force. People are considered employed if they did any work at all for pay or profit during the survey week. This includes all part-time and temporary work as well as full-time employment. People are also counted as employed if they had a job at which they did not work during the survey week because they were on vacation, ill, on strike, prevented from working by bad weather, or taking time off for personal reasons. Individuals who work without pay in family operated enterprises are considered employed if they work 15 hours or more per week.

People are classified as unemployed if they do not have a job, are currently available for work, and have actively looked for work in the past 4 weeks. Activities that are considered actively looking for work include registering in a public or private employment office, interviewing a prospective employer, placing or answering advertisements, writing letters of application, checking with friends or relatives, and being listed on a union or professional register.

All persons 16 or older who have jobs or are actively seeking employment are considered in the labor force. Out of a population of 220 million, the labor force is approximately 100 million. All others are classified as not in the labor force. Groups included in the latter category are children under 16, people in school, the physically or mentally disabled, retirees, housewives or househusbands, the financially independent, and those so discouraged that they have ceased looking for jobs.

The unemployment statistic is often criticized and sometimes misused. It doesn't reflect underemployment or changes in participation rates. The percentage of the population employed rather than unemployed has been suggested as a better measure of how the economy is doing. Nevertheless the statistic can be very useful in monitoring economic problems and devising policies to remedy them.

IMPACT OF THE MOTOR CARRIER ACT OF 1980 ON ARKANSAS: A PRELIMINARY ANALYSIS

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INTRODUCTION

President Carter's signing of the Motor Carrier Act of 1980[1] represented the culmination of considerable controversy and debate regarding federal regulation of motor transportation. Categorized as a "consumer bill," advocates of the legislation contend that freight rates will decline substantially while the overall quality of service will increase substantially.[2] Meanwhile, opponents of the new statute, allege that the new legislation will result in a drastic upheaval in the industry, raise rates, and decrease service ad infinitum.[3] Somewhere between these two extremes is perhaps the correct situation.

This legislation does not directly affect the entire trucking industry–only the regulated segment which currently provides approximately one-third of total intercity freight-ton-miles.[4] But, this new federal law will levy an inordinate impact upon the economy of Arkansas inasmuch as the industry is the principal transport mode among for-hire freight carriers in Arkansas. The primary purpose of this brief, tentative analysis is to: (1) review the Senate and House bills dealing with the final Act, (2) analyze the pertinent provisions of the Act, and (3) present a brief analysis of the major sections of the 1980 legislation as they affect Arkansas.

To accomplish this objective, a brief description of Arkansas' transportation network will be presented. The reader should bear in mind that Arkansas' statutes which affect transportation are patterned for the most part on similar federal laws, and the Arkansas Transportation Commission is currently investigating the validity of the concept of common carrier by motor in this State.[5]

ARKANSAS' TRANSPORTATION NETWORK

Any discussion of the present Arkansas transportation network is virtually meaningless without considering the demographic facets of the state. Arkansas is essentially a rural state, dependent upon agriculture for an economic base; but other activities that comprise the infrastructure are rapidly changing, even the agricultural orientation. Although predominantly rural, the population in a number of SMSA's has increased during the last two decades with the principal growth occurring in Pulaski County and in northwest Arkansas. Little Rock's population increased from 102,000 in 1950 to over 150,000 in 1975 while aggregate metropolitan population increased 11.1 percent during the same interval.[6] Meanwhile, the state's non-metropolitan population increased almost ten percent during the period.[7] Moreover, when expressed on a population density per square mile, Arkansas ranks 37th among the fifty states.

Given the population characteristics, density, agricultural orientation, and an incipient manufacturing and distribution capability, Arkansas is increasingly dependent upon highway transportation for essential mobility for both product consumption and distribution. In this regard, Arkansas ranks high in terms of petroleum consumption expressed on a per capita basis, and, as such, is fundamentally highway oriented. A recent survey, moreover, suggests that this singular dependence will accelerate on a relative basis in the immediate future.[8]

The Arkansas transportation network consists of 28 railroads, 385 common carriers by motor, and 6 air carriers. An examination of the existing rail system reveals that the principal routes bisect the state into the western and eastern segments with vast service gaps accentuated by the recent demise of the Rock Island Railroad in the central portion of Arkansas. Water transportation is primarily confined to the Arkansas, Mississippi, and Ouachita Rivers; and air freight service has not evolved as a principal freight carrier within the state. In short, motor transportation constitutes the primary mode of transportation of freight in Arkansas, and, as such, the Motor Carrier Act of 1980 impacts upon the State because many of the carriers are interstate in nature and will be governed by the new legislation.

LEGISLATIVE HISTORY

Although several bills designed to radically modify the for-hire motor carrier industry have been introduced in Congress, all were unsuccessful before 1980.[9] Senate Bill 2245 sponsored by Senator Cannon (D. Nev.) was introduced after extended hearings in 1979. That bill dealt primarily with eliminating rate bureaus, lumping, deregulating processed foods, and liberalizing entry into the motor carrier market. H.R.6418, introduced by Congressman Howard (D. NJ), was passed on June 19, 1980, and, without the normal House-Senate conference process, was returned to the Senate, promptly passed as an amendment to its bill and sent to the President who, in turn, signed the legislation into law on July 1, 1980.[10]

Obviously the legislation represents a fragile compromise between Congress, the executive branch, and the industry.[11] In this regard, the Interstate Commerce Commission's role has been carefully defined, past policies formulated by the agency have been curtailed or formalized into Title 49 of the U.S. Code, and important oversight provisions have been included in the finalized law.

The pertinent provisions of the new bill focus upon the major issues involved in the ongoing "regulation-deregulation" controversy: (1) market entry, (2) restriction reform, (3) exemptions from regulation, (4) food and groceries, (5) private carriage, (6) contract carriage, (7) rule of ratemaking, (8) rate bureaus, (9) written contracts, (10) brokers, (11) mixed loads, (12) joint rates and through routes, (13) temporary authority, (14) co-ops, (15) insurance, and (16) carrier entertainment expenses. Each of these provisions will be succinctly examined relative to its possible impact on Arkansas.

ANALYSIS

Market Entry. Traditional proof of public convenience and necessity emphasizing fitness, need, and customer support will be continued under the new bill. However, the *burden of proof* has been shifted from the applicant desiring to enter the trucking market to carriers presently operating in the desired market. Also, the ICC is specifically proscribed from issuing a "master certificate" while common carriers and contract carriers cannot protest each other's applications for authority.[12]

Ostensibly, liberalizing market entry appears to represent a major regulatory reform; but, in reality, the ICC has granted almost 95% of all new applications for authority during the past three years.[13] In Arkansas, this provision will have a dichotomous impact. On the one hand, the absolute number of firms applying for new operating authority will undoubtly increase. But, new entrants will probably concentrate in the highly volatile "specialized commodities" market because of capital barriers present in the general commodity LTL market.[14] Entry-exit patterns in the "specialized" market will fluctuate in response to shipper traffic patterns and customer servcie levels with the end result's being a balkanized, undercapitalized trucking industry within the State.

Restriction Removal. Among the major problems of regulating, on a detailed basis, the trucking industry are the myriad of certificate restrictions that specify what commodities a trucker can move, highways to be traveled, and points served. This detailed form of regulation evolved because of the "public utility" concept together with the evolution of various categories of for-hire carriers and the legal responsibilities associated with common carriage. But, during recent years, the ICC has moved to eliminate gateway restrictions and other certificate requirements in order to conserve fuel consumption.[15]

The new act not only requires the ICC to eliminate restrictions against "dual authority" from existing certificates but also to withdraw intermediate point restrictions, gateways, and roundtrip authority.[16] The Commission can also eliminate any other unreasonable restriction deemed wasteful of fuel, inefficient, or contrary to public policy. All general commodity, regular-route motor carriers will be affected by this provision; and this impact,except for small communities, will be minimal because of past regulatory decisions.

Exemptions. When initially passed in 1935, Part II of the Interstate Commerce Act provided for exempting original farm-to-market transportation of agricultural products. Over time, a series of judicial decisions expanded the definition of exempt commodities until 1958 when Congress specifically enumerated what goods were exempt.[17] The 1980 act exempts from economic regulation livestock and poultry feed as well as agricultural seeds and plants if these products are consigned to an agricultural production site. Also, the return of empty cargo containers and pallets used for shipping are exempt from economic regulation.

Obviously, Arkansas' agricultural interests will receive the primary impact of this provision. Rates could conceivably increase and service decrease in the event this market is not adequately served by scheduled service. Conversely, farmers using presently exempt truckers will probably not incur any substantial change in their shipping and receiving activities. Empty container return, however, will probably result in new carrier entrants specializing in this type freight service.

Food and Groceries. Sellers of food and grocery products employing a uniform zone delivered pricing system to compensate buyers who pick up goods at shipping points will not be unlawful if such compensation is available to all customers on a non-discriminatory basis and does not exceed the actual cost to the seller of the product. The impact of this provision will vary from firm to firm dependent upon individual firm pricing and delivery practives.

Private Carriage. The Motor Carrier Act of 1980 exempts intracorporate hauling from ICC economic regulation when the hauling carrier is 100% owned by a corporation. The only requirement, in addition to complying with federal safety laws, is notification to the ICC of the transportation arrangement and maintaining such notification in the vehicle cab. The impact of this provision on Arkansas firms depends entirely on corporate structures of various organizations that transport their own goods.

Rates. After one year, a new rule of rate flexibility will facilitate managerial pricing freedom of 10% over existing rates or decreases of 10% without ICC approval. After two years an additional 5% will be permitted. Moreover, no antitrust immunity exists for rates published in this zone. Traditional prohibitions against undue preference, prejudice, and discrimination remain in force.[18]

An initial reading of this provision suggests that rates conceivably could fall and thereby expand marketing areas for Arkansas firms. But, historical rate and distribution patterns change gradually over time; hence, any true rate innovations will probably result in a plethora of discrimination suits.[19] This same pricing freedom has been available for use in railroading since 1974, but has been used only sparingly because of antitrust implications. In the short-run, rates may decrease; but given escalating energy and labor costs, rates in Arkansas will, in all likelihood, continue to increase.

Value-Based Rates and Liability. This provision represents a dramatic departure from traditional common carrier philosophy regarding liability. Because of technological innovations, over the past twenty years rates and related product values have tended to lose their close relationships.[20] In effect, carrier liability for the full market value of goods damaged or lost was frequently not reflected in levied rates. The ICC has historically expressed reluctance to permit rates predicated on value but the new law permits such practices. The impact of this new provision on Arkansas will not be dramatic due, in part, to the basic nature of goods currently transported from Arkansas.

Rule of Ratemaking. The new rule of ratemaking is essentially dichotomous. First, the ICC is required to determine the reasonableness of rate levels, rate structures, and, in turn, is authorized to permit revenue levels that are adequate to permit well-managed carriers to cover operating costs and earn a fair rate of return. Second, the Commission is directed to establish standards based on *flows of net income, depreciation, debt repayment, cost of raising equity capital,* and *future inflation.* The new standards will negate a diminishing past reliance upon operating ratios in rate cases.[21] The impact on Arkansas should be more quality service and increased utilization of equity capital in motor carrier operations.

Rate Bureaus. Collective ratemaking represented one of the more polemical features of the new act. Rate bureaus are, in effect, cartels that serve as a nexus between shippers and carriers for pricing carrier services. These non-profit institutions perform a variety of functions designed to assist the ICC in its administrative function and, as such, reflect operational realities in joint rates and through routes. Although exempt from antitrust laws to some extent, under certain circumstances, these agencies must permit each member the unrestricted right to exercise "independent action"–a condition precedent that available data suggest has not been violated. Also, rates published by bureaus apply only to a limited number of motor carriers, and their rates are normally lower than if each carrier published its own rates in individual tariffs. Finally, the ICC has jurisdiction over bureau activities.[22]

The new law commences on January 1, 1981, and specifies that only those carriers with authority to participate in a proposed transportation transaction can vote on the rate. Total prohibition is specified for rates set in the "zone of reasonableness". Starting in 1984, no carrier can vote or discuss single-line rates. Before 1984, any carrier discussion is limited to average carrier cost. The principal impact on Arkansas shippers will be concentrated on those consignors who use general commodity, regular route, LTL service. Unless this provision is repealed by Congress, these shippers will be confronted, almost by definition, with substantial rate increases because most joint rates will, in all likelihood, be dissolved.[23]

Written Contracts. This provision compels brokers and truckers of exempt commodities, the ICC, and the Secretary of Agriculture to require written contracts to be entered into by both consignors, consignees, and in some instances, third parties. Formal contractual arrangements will, in all likelihood, result in diminished litigation among shippers and exempt carriers.

Brokers. Freight brokers will no longer be required to demonstrate public need for the proposed service. Because of this liberalization policy, the number of brokers can conceivably increase in the state.

Mixed Loads. Representing a major change in Commission and Congressional policy, regulated and non-regulated commodities can now be transported in the same trailer. This practice should result in more efficient carrier operations, increased load factors, and a general reduction in the number of backhaul miles.

Joint Rates and Through Routes. As a matter of general business practice, motor carriers publish joint rates and through routes that enable continued shipment between two points not served by the same carrier. Joint rates, as previously indicated, are cheaper than local or combination rates. The ICC has been authorized to compel railroads to publish joint rates and through routes but lacked similar authority relative to motor carriers falling within their regulatory jurisdiction. This provision is somewhat conflicting with the provision providing for the elimination of collective ratemaking in another section of the act.

A secondary provision of the act is also important and impacts on the new rule of ratemaking. Not only are freight forwarders authorized to enter into contracts with rail and motor carriers, but the bill requires *prompt payment of revenue divisions.* This requirement conflicts with present Commission policy designed to modify current credit limitation periods necessary in an industry that experiences rapid fluctuations in cash flow.

The impact of the joint rates and through route provisions on Arkansas is not clear at this time because of the conflicts with other sections of the new laws. This observation is reinforced by past practices of maintaining such commercial agreements in the past through tariff and contract provisions.

Temporary Authority. New authority based on emergency conditions or the pressing need of a shipper or shippers can be granted for a period of 270 days, an increase from the present 180 days.[24] Arkansas shippers will, in all likelihood, experience an increase in the absolute number of new carrier entities or new services by existing carriers. The impact will be minimal in that past ICC practices entailed granting virtually all new applications for motor carrier authority.

Co-ops. The new law permits agricultural cooperatives to transport 25% of their total interstate tonnage in non-farm, non-member goods in movements incidental to their primary business as cooperatives. This particular section of the new law will permit agricultural coops operating in Arkansas to reduce their empty backhaul miles, and thus could be fuel efficient.

Lumping. Responsibility for loading or unloading lading has resulted in numerous controversies in the transportation community, and the new law requires that shippers and receivers must assist owner-operators in this function or compensate them for their efforts. Trip leases, moreover, must specify the party responsible for the loading and unloading function. When a conflict exists between an owner-operator and the shipper or receiver, the conflict is to be resolved in favor of the owner-operator. The ICC and other parties are to report their experiences under this new law to the Congress by January, 1981.

Factor cost to shippers and receivers located in Arkansas will increase because of this new provision. The impact, of course, will vary by prevailing wage rates between firms and industires domiciled within the state.

Insurance. Insurance coverage is increased substantially by the Motor Carrier Act of 1980. Carriers are now required to carry $750,000.00 in liability insurance, and an additional $5 million in liability coverage if the carrier transports hazardous materials. The respective amounts cannot be reduced to under $500,000.00 and $1 million. The immediate impact in Arkansas will be increased rates because of escalating insurance premiums.

Entertainment. This provision amends the Elkins Act relating to rebates. By January, 1981, the ICC must establish guidelines for solicitation expenses and these outlays will be excluded from the rate base.

SUMMARY AND CONCLUSIONS

The basic purpose of this paper was to examine the provisions of the newly enacted Motor Carrier Act of 1980 and to comment on any possible impact on shippers and carriers operating in Arkansas. Given the rural-agricultural orientation of the state's economy together with its existing transportation capabilities, the impact of this legislation will be substantial in Arkansas because it applies only to for-hire motor carriers. Comprehensive in nature, the legislation appears to address each of the major issues that surfaced in the seemingly endless regulation-deregulation debate, ranging from market entry to entertainment expenses.

But, a minute examination of the legislation reveals that Congress has merely estopped the ICC from pursuing perceived regulatory modification that failed to comply with Congressional perceptions regarding the industry. For example, the new act appears to liberalize market entry by new firms, but simultaneously increases mandatory insurance coverage. Also, collective ratemaking will be continued for three years while an independent commission studies the need for continuing this practice. Other provisions, such as dual authority restriction removal, merely recognize existing practices in the industry. In this regard, the new rule of ratemaking recognizes the need for more pragmatic standards for use in finance dockets, and the increased use of capital markets for equity by motor carrier management.

Congress has, in effect, legalized some existing practices in the industry and proscribed the Interstate Commerce Commission from pursuing reforms it perceived as necessary. Because the ICC must institute rulemaking proceedings to implement the new law, Congress enacted oversight provisions directing the ICC to provide detailed reports to the legislative branch for the next five years. In short, Congress has mandated the changes it desires to be made in the industry.

Nevertheless, the new Motor Carrier Act of 1980 will levy an inordinate impact on Arkansas because of its motor carrier orientation for shipping. Also, the Arkansas Transportation Commission is currently investigating its present regulatory laws and practices as the new legislation calls for uniformity between state and federal laws relating to for-hire motor transportation. In short, Arkansas shippers and carriers will be confronted with a slightly increased number of new carriers, some increase in rates, and additional safety and product shipping protection because of expanded insurance coverage requirements. But, the rulemaking activities should be closely scrutinized by both shipper and carriers in both the nation and Arkansas.

FOOTNOTES

[1] U.S. Congress, HRS2245 Motor Carrier Act of 1980, signed by the President July 1, 1980, amends Title 49 U.S. Code.

[2] For a review of the arguments for and against benefits to be derived from deregulating the domestic trucking industry, see Grant M. Davis, "The Basic Behavior of Regulatory Commissions–A Comment," *Transportation Journal,* Vol. 12, No. 1, (Fall, 1972), pp. 36-40.

[3] Ibid. Also see, Grant M. Davis, *Transportation Regulation: A Pragmatic Assessment,* (Danville, Illinois: The Interstate Printers and Publishers, 1976), Chapters 1 and 2.

[4] In reality only approximately one-third of the total intercity freight ton-miles generated by motor carriers are subject to economic regulation. For an indepth examination of this market description, consult Roy J. Sampson and Martin T. Farris, *Domestic Transportation* (4th ed., Boston, Mass.: Houghton Mifflin Co., 1976).

[5] This investigation will be continued in October of 1980. The investigation is being pursued under the authority of Arkansas Statutes, Act 397, Section 1955, as amended.

[6] *U.S. Bureau of the Census, Statistical Abstract of the United States: 1977,* (98th ed.: Washington, D.C.: U.S. Government Printing Office, 1977), p. 23.

[7] Ibid.

[8] Grant M. Davis and Charles S. Sherwood, "Energy Consumption Forecast for Arkansas," *Arkansas Business and Economic Review,* Vol. 8, No. 3, (Fall, 1975), pp. 1-9.

[9] Donald V. Harper, *Transportation in America: User, Carriers, Government* (Englewood Cliffs, NJ: Prentice Hall, Inc., 1978), Chapter 19.

[10] Supra, note 1.

[11] "Truck deregulation bill as passed by Congress, sent to President," *Traffic World,* June 30, 1980), p. 11.

[12] U.S. Code, Title 49, Section 10922.

[13] Grant M. Davis, *Collective Ratemaking in the Motor Industry: Implications to the American Public,* (Danville, Illinois: Interstate Printers & Publishers, 1980), Chapters 4 and 5.

[14] This particular segment of the market requires a relatively large capital investment and fixed facilities and equipment that effectively bars numerous potential motor carriers from this market.

[15] Gateway eliminations commenced in 1974 and accelerated during recent years.

[16] Title 49, U.S. Code, Section 10526(a)(6).

[17] Supra, note 9.

[18] David, loc. cit.

[19] This action is anticipated because of traditionally established patterns of commerce and shipping.

[20] Grant M. Davis and Eugene H. Shepard, *Motor Carrier Rate Structures,* (New York: Praeger Publishers, Inc., 1978), Chapter 1.

[21] Title 49, U.S. Code, Section 10701, and amends previous Section 13.

[22] Davis, loc. cit.

[23] For an example of how these prices will increase when published individually, consult Grant M. Davis and Charles S. Sherwood, "The Case For Single-Line Immunity," *ICC Practitioners Journal,* Vol; 43, No. 6 (September/October, 1976), pp. 740-747.

[24] By extending the authority for temporary authority, the Commission will be granted additional work days for processing applications.

PROPERTY TAX ALTERNATIVES IN ARKANSAS*

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BACKGROUND ON THE PROPOSED PROPERTY TAX CHANGES

Recently, the Arkansas Supreme Court upheld a ruling by the Pulaski County Circuit Court that property taxes were not being assessed equally and uniformly across the state as provided by the Constitution. In general, after finding that most property was being assessed at different rates and below the 20 percent of current market value as required by constitutional law, the Court ordered a specific set of actions to ensure compliance with the law. If fully implemented, the court order would result in substantial increases in property tax collections through reassessment of all types of property at 20 percent of present market value.

Both the Legislature and the Constitutional Convention have developed proposals that attempt to modify the likely effects of the changes required by the court order. Those proposals will appear on the ballot in this year's general election as Amendment 59 and as a part of the proposed new constitution, respectively. The purpose of this article is to outline the court order and major provisions of each of the proposals, indicate the different possible outcomes of the general election, and suggest considerations which might be helpful to voters in deciding what alternative to support.

MAJOR POINTS OF THE DIFFERENT TAX PROPOSALS

The court order specified that under the present constitution all property must be assessed at 20 percent of its current market value. This means, for example, that, if a house has a current value of $100,000, it would be assessed at $20,000. There is evidence that property in Arkansas is generally assessed at less than one-half the legal assessment rate.[1] Thus, if the court order is implemented and millage rates remain the same property tax collections will probably double. The court order also specified that beginning in 1980 reassessment must be undertaken at the rate of 15 counties per year for five consecutive years.

In response to that court order the Legislature drafted Amendment 59, the major provisions of which are as follows (a complete text of this amendment and the property tax sections of the proposed new constitution, appear in Appendixes 1 and 2, respectively):[2]

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*Published with the approval of the Director of the Arkansas Agricultural Experiment Station.

A. One section specifies that, with some minor exceptions, tax collections could not increase by more than 10 percent per year for any taxing jurisdiction after reassessment (the so-called lid law). This limit, or lid, on tax collections would be accomplished through a rollback in millage rates. Also, under this section, personal-property-tax-revenue and utility-and-common-carrier-property-tax-revenue levels would be frozen. As new property of this type is put on the assessment rolls over time, the millage rates for these properties are to be lowered until real property millage rates are equalized with personal property and utility millage rates.

B. Land–primarily agricultural, pasture, and timber–would be assessed on the basis of its productivity or value in use rather than market value. Residential property used solely as the principal place of residence of the owner would be assessed on its value as a residence.

C. The Legislature could enact laws establishing a homestead exemption on the residences of older citizens.

D. Certain property tax exemptions, similar to those now in effect, are also specified.

The proposal contained in the proposed new Constitution, is designed, as in Amendment 59, to lessen the impact of the statewide reassessment on taxpayers, protect local taxing units from a loss in property tax revenue, and equalize property assessments within and between taxing units. The constitutional proposal includes the following major points:

A. Not all property will be assessed on the basis of current market value. Specifically, farm land, timber land, and residences would be assessed on the basis of use value. In addition, the proposed constitution includes enabling clauses which would allow the Legislature to modify somewhat the distribution to local schools of property taxes collected from utility complexes, establish homestead exemptions somewhat similar to those in Amendment 59, and classify or exempt personal property taxes for household personal property. It also contains property tax exemptions which are quite similar to those in Amendment 59.

B. A second major point of the proposed new constitution deals with the lid law and millage rollback mechanism. This proposal is somewhat different from that in Amendment 59 by permitting either a millage increase or a decrease as necessary. A major difference is that personal-property and utility-and-common-carrier-property-tax revenues would not be frozen as it would be under Amendment 59.

C. A third major point of the proposal deals with the classification of property, which is something that is not in Amendment 59 at all, but might be done under one of the sections if the Legislature so desired. This proposal would classify property into one, two, or three different classes and would have assessment rates that are different for each of the classes. Class I property (all property of utilities, railroads, other common carriers, and personal property) will be assessed at 20 percent. Class II property (all agricultural, pasture land, timber land, commercial property and all property not otherwise classified) will be assessed at 15 percent. Class III property (all residential property used as a principal residence by the owner, timber land, and commercial property) will be assessed at 10 percent.

D. Finally, the new constitutional proposal deals with the level of county and municipal millage rates that would be permissible under the constitution. This proposal would allow voters to increase the millage level for county and municipal governments above what it is presently; in fact, it would take the ceiling off millage levels for county and municipal governments and make them comparable to the schools which do not have a ceiling.

POSSIBLE OUTCOMES

Voters will have at least four options when they go to the polls and vote on the tax question in November, 1980:

1. They can vote against Amendment 59 and against the new constitution.
2. They can vote for the new constitution and against Amendment 59.
3. They can vote for Amendment 59 and against the new constitution.
4. They can vote for Amendment 59 and for the new constitution.

A logical question that voters should have the answer to is: What will be the impact or the outcome of each of these options? First, if neither Amendment 59 nor the proposed new constitution passes, then:

- Assessed values of all real property, other than that of utilities and common carriers, would increase substantially.
- Personal property taxes and assessments would increase very little.
- Property taxes of utilities and common carriers would increase very little.
- Taxes on real property, other than utilities and common carriers, would go up substantially in most counties after reassessment.
- Local taxing units would receive large increases in property-tax revenue unless millage rates were reduced by local elections.
- Equalization of assessments would occur.

If the proposed new constitution passes but Amendment 59 does not, then:

- Assessed value for agricultural, pasture, and timber lands and residences would increase moderately.
- Assessed values of personal property, as well as that of utilities and common carriers, would change very little.
- Property taxes on agricultural and timber land, commercial and industrial real property, and residences would increase moderately.
- Property taxes on utilities, common carriers, and personal property would decrease.
- Property taxes collected by school districts where utility complexes are located could decrease.
- No taxing unit would lose revenue from the property tax because of reassessment.
- There would be little change in the kinds of property exempt from property taxes.
- The millage ceiling on county and city governments would be removed.
- Equalization of assessments would occur.

If Amendment 59 passes but the proposed new constitution does not, then:

- Assessed value of real property would increase but less than if both of the proposals were defeated.
- Assessed values of personal property, as well as that of utilities and common carriers, would change very little.
- Taxes on personal property and the property of utilities and common carriers would be frozen at their base year level until equalization occurred.
- Property taxes on farm, pasture, and timber lands and on commercial properties would increase moderately.
- Property taxes on residential real property would fall in some counties and for homeowners who are 65 years of age or older.
- No taxing unit would lose property tax revenue because of reassessment.
- Local taxing units could receive a maximum increase of 10 percent in property tax revenue because of reassessment or the tax revenue from newly discovered property and new construction, whichever is greatest.
- Equalization of assessments would occur.

If both Amendment 59 and the new constitution pass, the provisions of the new constitution would apply.

ADDITIONAL CONSIDERATIONS

The situation in Arkansas regarding property tax changes is made more complex because of uncertainties in other related areas of taxation and government. These uncertainties include possible Federal-revenue-sharing cutbacks, millage rollbacks, and considerations about local public service levels. The revenue sharing program is one where the Federal government provides funds directly to local (both county and municipal) and state governments; and while it has become an important source of revenues for local governments, revenue sharing also has its critics. One criticism is that local governments should raise their own revenues rather than relying on the Federal government. If revenue sharing is eliminated or reduced in the future, local governments will either have to obtain additional revenues from other sources or they will have to curtail some of the services that they offer. There are other potential revenue sources that local governments could use. These have been analyzed in a publication entitled *An Analysis of County Finances and County Finance Alternatives in Arkansas.*[3] Two possibilities for additional revenues are the county income tax and the county sales tax. Both have advantages and disadvantages. However, neither may be acceptable to county voters.

Additional uncertainty concerns millage rollbacks under the new system of property taxation ordered by the Court. There are some observers who feel that the millage rollbacks prescribed by Amendment 59 may have to be changed because the millage is specified in bonded indebtedness agreements. It is impossible to state in advance what the final ruling would be in this case.

When revenues of local governments have been cut in the past, minor decreases in the government services paid for by the revenues have occurred. If there is a large cut in revenues then major decreases in government services can be expected. Each individual has his own perception of what level of government service is the acceptable minimum. The larger the cut in revenues the more likely it will be that large numbers of individuals will believe that public service levels have been cut below the acceptable minimum.

The situation is made more difficult when price inflation is taken into account. If inflation averages 10 percent a year, then, by 1985, local governments will be spending over 50 percent more to provide the 1980 level of services.

CONCLUSIONS

Voters are faced with several alternatives on the very complex issue of property taxation. No matter what the outcome of the General Election, property will not be taxed the same as it has been in the past. Both Amendment 59 and the proposed new constitution attempt, in different ways, to modify the impact of the court order which, if implemented, would change dramatically our present assessment practices, i.e., *all* property would be assessed on the basis of *current market* value. If either of these proposals passes, certain types of property would be assessed on the basis of value in use or productivity. Moreover, these proposals would tend to lessen the increase in property tax collections through lid - law and millage - rollback provisions. However, even if neither proposal passes, property tax collections need not increase excessively, i.e., under present law, citizens have the power, with some limitations, to establish lower millages through referendum. Finally, considerations about the immediate financial impact of each of these proposals needs to be balanced with the uncertainties of financing local public services in the future.

FOOTNOTES

[1] Based on a study performed by the Assessment Coordination Division in 1978.

[2] The following two sections have been extracted, with some modifications, from: Carl Farler, Proposed Arkansas Property Tax Changes, *Miscellaneous Publication 175,* Cooperative Extension Service, University of Arkansas Division of Agriculture, Little Rock, April 1980.

[3] Joseph A. Ziegler and others, "An Analysis of County Finances and County Finance Alternatives," *Bulletin 846,* Arkansas Agricultural Experiment Station, Fayetteville, August, 1980.

APPENDIX 1

AMENDMENT 59

[*Taken from Senate Joint Resolution 1 as engrossed 1/17/80]

THAT Article XVI of the Constitution of the State of Arkansas is hereby amended by adding thereto new Sections, to read as follows:

SECTION 14. (a) Whenever a countywide reappraisal or reassessment of property subject to ad valorem taxes *made in accordance with procedures established by the General Assembly* shall result in an increase in the aggregate value of taxable real and personal property in *any taxing unit in this State* of ten percent (10%) or more over the previous year the rate of *city or town, county, school district, and community college district* taxes levied against the taxable real and personal property of each *such* taxing unit shall, upon completion of such reappraisal and reassessment, be adjusted or rolled back, by the governing body of the taxing unit, for the year for which levied *as provided below.* The General Assembly shall, by law, establish the procedures to be followed by a county in making a countywide reappraisal or reassessment of property which will, upon completion, authorize the adjustment or rollback of property tax rates or millage, as authorized hereinabove. *The adjustment of rollback of tax rates or millage for the "base year" as hereinafter defined shall be designed to assure that each taxing unit will receive an amount of tax revenue from each tax source no greater than ten percent (10%) above the revenues received during the previous year from each such tax source, adjusted for any lawful tax or millage rate increase or reduction imposed in the manner provided by law for the year for which the tax adjustment or rollback is to be made, and after making the following additional adjustments:*

> *(i) by excluding from such calculation the assessed value of, and taxes derived from, tangible personal property assessed in the taxing unit, and all real and tangible personal property of public utilities and regulated carriers assessed in the taxing unit, and*
>
> *(ii) by computing the adjusted or rollback millage rates on the basis produce an amount of revenue no greater than ten percent (10%) above the revenues produced from the assessed value of real property in the taxing unit (after making the aforementioned adjustments for personal properties and properties of public utilities and regulated carriers noted above) from millage rates in effect in the taxing unit during the base year in which the millage adjustment or rollback is to be calculated. Provided, further, that in calculating the amount of adjusted or rollback millage necessary to produce tax revenues no greater than ten percent (10%) above the revenues received during the previous year, the governing body shall separate from the assessed value of taxable real property of the taxing unit, newly-discovered real property and new construction and improvements to real property, after making the adjustments for personal property or property of public utilities and regulated carriers noted above, and shall compute the millage necessary to produce an amount of revenues equal to, but no greater than the base year revenues of the taxing unit from each millage source. Such taxing unit may elect either to obtain an increase in revenues equal to the amount of of revenues that the computed or adjusted rollback millage will produce from newly-discovered real property and new construction and improvements to real property, or if the same be less than ten percent (10%), the governing body of the taxing unit may recompute the millage rate to be charged to produce an amount no greater than ten percent (10%) above the revenues collected for taxable real property during the base year.*

Provided, however, that the amount of revenues to be derived from taxable personal property assessed in the taxing unit for the base year, other than personal property taxes to be paid by public utilities and regulated carriers in the manner provided hereinabove, shall be computed at the millage necessary to produce the same dollar amount of revenues derived during the current year in which the base year adjustment or rollback of millage is computed, and the millage necessary to produce the amount of revenues received from personal property taxes received by the taxing unit, for the base year shall be reduced annually as the assessed value of taxable personal property increases until the amount of revenues from personal property taxes, computed on the basis of the current year millage rates will produce an amount of revenues from taxable property equal to or greater than received during the base year, and thereafter the millage rates for computing personal property taxes shall be the millage rates levied for the current year.

Provided, however, that the taxes to be paid by public utilities and regulated carriers in the respective taxing units of the several counties of the State during the first five (5) calendar years in which taxes are levied on the taxable real and personal property as reassessed and equalized in each of the respective counties as a part of a statewide reappraisal program, shall be the greater of the following:

(1) the amount of taxes paid on property owned by such public utilities or regulated carriers in or assigned to such taxing unit, less adjustments for properties disposed of or reductions in the assessed valuation of such properties in the base year as defined below, or

(2) the amount of taxes due on the assessed valuation of taxable real and tangible personal property belonging to the public utilities or regulated carriers located in or assigned to the taxing unit in each county at millage rate levied for the current year.

As used herein, the term "base year" shall mean the year in which a county completes reassessments and equalization of taxable real and personal property as a part *of a statewide reappraisal program, and extends the adjusted or rolled back millage rates for the first time, as provided in subsection (c) of this Section, for the respective taxing units in such county for collection in the following year.*

(i) in the event the amount of taxes paid the taxing unit in a county in the base year, as defined herein, is greater than the taxes due to be paid to such taxing unit for the current year of any year of the second (2nd) period of five (5) years after the base year, the difference between the base yecr taxes and the current year taxes for any year of such five (5) year period shall be adjusted as follows:

Current year of second period of five (5) years	*Taxes shall be current year taxes to which shall be added the following percentage of the difference between the current year taxes and the base year taxes (if greater than current year taxes)*
1st year	*80% of difference*
2nd year	*60% of difference*
3rd year	*40% of difference*
4th year	*20% of difference*
5th year and thereafter	*Current years taxes only.*

(ii) If the current year taxes of a public utility or regulated carrier equal or exceed the base years taxes due a taxing unit during any year of the first ten (10) years after the base year, the amount of taxes to be paid to such taxing unit shall thereafter be the current years taxes and the adjustemnts authorized herein shall no longer apply in computing taxes to be paid to such taxing unit.

Provided, that in the event the aforementioned requirement for payment of taxes by public utilities and regulated carriers, or any class of utilities or carriers for the ten (10) year period noted above, shall be held by court decision to be contrary to the constitution or statutes of this State of the Federal Government, the General Assembly may provide for other utilities or classes of carriers to receive the same treatment provided or required under the court order, if deemed necessary to promote equity between similar utilities or classes of carriers.

(b) The General Assembly shall, by law, provide for procedures to be followed with respect to adjusting ad valorem taxes or millage pledged for bonded indebtedness purposes, to assure that the adjusted or rolled-back rate of tax or millage levied for bonded indebtedness purposes will, at all times, provide a level of income sufficient to meet the current requirements of all principal, interest, paying agent fees, reserves, and other requirements of the bond indenture.

SECTION 15. (a) Residential property used solely as the principal place of residence of the owner thereof shall be assessed in accordance with its value as a residence, so long as said property is used as the principal place of residence of the owner thereof, and shall not be assessed in accordance with some other method of valuation until said property ceases to be used for such residential purpose.

(b) Agricultural land, pasture land, timber land, *residential and commercial land, excluding structures thereon,* used primarily as such, shall be valued for taxation purposes under the provisions of Section 5 of this Article, upon the basis of its agricultural, pasture, timber, *residential, or commercial* productivity or use, and when so valued, such land shall be assessed at the same percentum of value and taxed at the same rate as other property subject ot ad valorem taxes.

(c) The General Assembly shall enact laws pro- Section and for the imposition of penalties for violations of this Section, or statutes enacted pursuant thereto.

SECTION 16. The General Assembly, upon approval thereof by a vote of not less than three-fourths (3/4 ths) of the members elected to each house, may provide that the valuation of real property actually occupied by its owner as a residence who is sixty-five (65) years of age, or older, may be exempt in such amount as may be determined by law, but no greater than the first Twenty Thousand Dollars ($20,000) in value thereof, as a homestead from ad valorem property taxes.

SECTION 17. The provisions of Section 5 of Article XVI of the Constitution of the State of Arkansas of 1874 are hereby repealed, and the following provisions are substituted in lieu thereof:

"Section 5. (a) All real and tangible personal property subject to taxation shall be taxed according to its

value, that value to be ascertained in such manner as the General Assembly shall direct, making the same equal and uniform throughout the State. No one species of property for which a tax may be collected shall be taxed higher than another species of property of equal value, except as provided and authorized in Section 15 of this Article, and except as authorized in Section 14 of this Article. The General Assembly, upon the approval thereof by a vote of not less than three-fourths (3/4 ths) of the members elected to each house, may establish the methods and procedures for valuation of property for taxation purposes, but may not alter the method of valuation set forth in Section 15 of the Article.

(b) The following property shall be exempt from taxation: public property used exclusively for public purposes; churches used as such, cemeteries used exclusively as such; school buildings and apparatus, libraries and grounds used exclusively for school purposes; and buildings and grounds and materials used exclusively for public charity.

Nothing in this Section shall affect or repeal the provision of Amendment 57 to the Constitution of the State of Arkansas pertaining to intangible personal property."

APPENDIX 2

ARTICLE 7

[Sections of the Proposed Constitution Pertaining to Property Taxation]

SECTION 5. PROPERTY TAXATION

(a) Uniformity

No ad valorem tax shall be levied by the State except as provided in paragraph (b)(1) of this Section. All property subject to taxation shall be assessed uniformly throughout the State upon each of the following species of property: personal property, intangible personal property, and no more than three classes of real property. The General Assembly shall prescribe uniform methods for determining the value for taxation purposes of each type of property within classes which shall be based on either fair market value or productivity and/or use value, provided that agricultural land, pasture land, and timber land shall be assessed by productivity and/or use value.

(b) Exemptions

(1) Large Utility Complexes–School Taxes The General Assembly may preempt from a taxing unit or units all or part of the assessment, levy, and collection of ad valorem taxes charged for school purposes against large utility complexes, as defined by law, and may distribute these taxes to school districts in accordance with a distribution formula provided by law.

(2) Homestead Exemption

The General Assembly may provide a homestead exemption from the ad valorem property tax for owners of property who are (a) sixty-five years of age or older, or (b) service-connected disabled veterans or their surviving spouses. The General Assembly shall provide restitution to the respective political subdivisions for the revenues lost by reason of these exemptions, or may provide for tax credits or rebates in lieu of an exemption.

(3) Personal Property

(a) The General Assembly may classify personal property for assessment at lower percentages of value than other property, or exempt tangible property located and used in the home, or may exempt personal effects.

(b) The General Assembly may classify intangible personal property for assessment at lower percentages of value than other property and may exempt one or more classes of intangible personal property from taxation, or may provide for the taxation of intangible personal property on a basis other than ad valorem.

(4) Other Property

(a) The following property shall be exempt:

(i) public property used exclusively for public purposes;

(ii) churches used as such;

(iii) all charitable and nonprofit cemeteries;

(iv) cemetery lots not held for sale;

(v) school buildings, equipment, libraries, and grounds used exclusively for nonprofit school purposes; and

(vi) conservation easements as defined by law.

(b) The General Assembly may exempt property used exclusively by a nonprofit corporation or trust for museum, fine arts, theater, library, musical, historical, charitable, or other related purposes.

(c) Local taxing units may exempt from property taxation the capital invested in specific industries located within that taxing unit for a period not to exceed seven years, or as provided by law.

(d) All laws exempting property from taxation other than those provided in this Constitution shall be void.

SCHEDULE 2

SECTION 3. TRANSITION PROVISIONS OF PROPERTY TAXES

(a) Classification and Assessment Ratios of Real property.

Taxable real property shall be divided into three assessment classes:

Class I–20 percent of value. Property of utilities, railroads, and other common carriers.

Class II–15 percent of value. All agricultural land, pasture land, timberland, commercial property and all property not otherwise classified.

Class III–10 percent of value. All residential property used as the principal residence by its owner.

(b) Personal Property.

Tangible personal property located and used in the home and personal clothing and effects are exempt from taxation. Except as otherwise provided in this Constitution or Schedules personal property shall be assessed at 20% of value.

(c) As provided by law, all personal property tax shall be collected within the taxable year in which levied. In the first tax year under this procedure, one year's personal property taxes shall be forgiven.

(d) Severability Clause.

If any provision or portion of this Schedule section on ad valorem taxes shall be ruled unconstitutional, the remaining provisions or protions shall remain in full force and effect.

SECTION 7. LARGE UTILITY COMPLEXES–SCHOOL TAXES

The General Assembly may preempt from a taxing unit or taxing units all or part of the assessment, levy, and collection of ad valorem taxes charged for school purposes against large utility complexes, as defined by law, and may distribute those taxes to school districts in this State in accordance with a distribution formula provided by law. There shall be retained for the school districts in which these complexes are located a portion of the ad valorem tax on the complexes which, when added to other tax revenues of that district, yields to those districts an amount that doubles the average per-pupil expenditure for all districts, calculated without consideration of the ad valorem taxes generated by utility complexes subject to this provision.

SCHEDULE 3

SECTION 9. EFFECTIVE DATE OF CLASSIFICATION

(a) The classification of taxable property and the accompanying ratios of assessed value thereon, as described in Section 3(a) of Schedule II, shall become effective in the year of assessment for the respective counties, as the statewide reassessment order affirmed by the Supreme Court of Arkansas (No. 79-25), June 25, 1979, is applied.

(b) Millage Adjustments

(i) After the court-ordered reassessment is completed, the millage rate of each taxing unit shall be adjusted to yield no more than 10 percent in excess of of the previous year's property tax revenues, but such that property tax revenue would be no less than the previous year, rounded to the nearest one-half (0.5) mill, and excluding therefrom, in making such adjustment, newly discovered property and new construction or improvements. These adjustments shall be made by each governing body without regard to millage limitations in this Constitution. The General Assembly shall provide for the implementation of this adjustment.

(ii) The full faith and credit of the State of Arkansas is hereby pledged as additional security to assure that no outstanding bond issue authorized by any taxing unit of this State shall be defaulted because of a millage adjustment made pursuant hereto. In the event of such a default the General Assembly shall appropriate an adequate sum of money to cure such default, and shall enact other appropriate legislation as needed to implement the purpose hereof.

CONSENSUS OUTLOOK FOR KEY ECONOMIC TRENDS IN THE ARKANSAS ECONOMY DURING 1980-81

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In June 1980 the Bureau mailed to 225 Arkansans a questionnaire covering many facets of the 1980 and 1981 Arkansas economy. Those receiving the survey included businessmen, government officials, and academicians. Ultimately, 77, or 34 percent, of those addressees, broadly representative of the group surveyed, returned usable questionnaires. Exhibit 1 is a facsimile of the questionnaire on which the key percentage distribution of responses to the various questions is also shown (figures rounded to nearest percent).

MAJOR U.S. ECONOMIC AND POLICY ISSUES

Over 40 percent of the individuals responding rated inflation as the most serious of 1980's economic problems and 36.4 percent listed it as the most serious problem for 1981. Approximately 75 percent of the respondents rated inflation as one of the top three issues that would exert the most influence on U.S. economic conditions in both 1980 and 1981. Beyond inflation, there was no significant consensus as to the relative importance of various economic problems but declining productivity and real growth was the problem receiving the second largest number of first-place votes for both years. Other issues receiving relatively large numbers of rankings as one of the top three issues were recession (53.2 percent in 1980 and 49.4 percent in 1981); government deficit spending (32.5 percent - 1980 and 41.6 percent - 1981); unemployment (27.3 percent - 1980 and 20.8 percent - 1981); and energy cost and supply (25.9 percent - 1980 and 36.4 percent - 1981).

Eighty-five percent of the respondents ranked cutting government spending as one of the top three ways to reduce inflation. Deregulating commerce and reducing the supply of money while tightening credit were both mentioned among the first three solutions by about 30 percent of the respondents. Other solutions were selected by even smaller percentages of respondents.

For both years over 62 percent of the respondents felt the preferred approach to reduce unemployment in the U.S., was the stimulation of investments through tax credit. Other favored approaches included letting the price system update the market, cutting welfare programs, and eliminating the minimum wage for teenagers.

All respondents placed the U.S. in a recession in 1980 but they were almost equally divided as to 1981's being a recession year.

In summary, other responses concerning the U.S. economy were: general support for solving energy crises through the private sector and in a free market environment; a worsening of the deficits in international trade during 1980; and rise of the Dow Jones Industrial Average to 800 or more during 1980 and to 850 or more during 1981.

ECONOMIC TRENDS IN ARKANSAS

The questions in this portion of the survey were rather wide ranging. Thus, for simplicity in covering the topic, items are discussed in broadly related groupings.

With respect to business activity, the following opinions emerged. The level of commercial-industrial activity was expected to be down in 1980 and up in 1981. Those surveyed felt that the cost of production would rise in both 1980 and 1981. Short term working capital loans were expected to fall in 1980 and to rise in 1981. With the fall in loans in 1980, a decline was expected in interest rates. There was little consensus, however, with regard to interest rates in 1981. Apparently, respondents perceived that little demand will exist for funds in 1980 as the availability of capital investment funds was projected to decline. But in 1981 the latter was projected to increase. Supportive of that view on investment funds was the expectation that the utilization of plant capacity would decline in 1980 and would then be about the same or increase in 1981.

Seventy five percent of the respondents felt residential construction activity would decline over 1980 but only 55 percent projected an increase in 1981. As compared with the U.S. experience, those surveyed felt that the downturn in construction activity in Arkansas would be less severe in 1980 and either less severe or about the same in 1981.

Based on the responses received, the labor force would remain relatively constant during 1980; however, for 1981 there was a slight preference for growth. The 1980 unemployment rate was seen as ranging from 7 to 8 percent and then declining to between 5 and 7 percent in 1981. Finally, wage rates were expected to be up in both years.

Turning to other factors, approximately 90 percent of the respondents felt utility rates would rise in 1980 while over 95 percent felt this would remain true in 1981. With respect to consumer prices in 1980, 36.4 percent said they would be up by 5 to 10 percent and another 29.9 percent indicated an increase of 10 to 15 percent. In 1981, 51.9 percent said consumer prices would be up 5 to 10 percent, while another 23.4 percent indicated a range upward of 10 to 15 percent. In the area of cost of transportation services, substantial majorities indicated price increases in both years.

In dealing with broader questions, there was no consensus on economic opportunities in Arkansas during 1980 but 48.0 percent stated they would be higher in 1981. In a similar vein, the state's attraction for new businesses in 1980 was projected to be about the same as that in 1979 but a majority opinion was expressed for an increase in attractiveness in 1981.

SUMMARY

Various national issues are perceived as important but inflation was regarded as the most significant of them. By and large, the respondents preferred to correct national economic problems through a reduction in government intervention and a stimulation of investment in the private sector.

The majority opinion foresaw a recession in 1980 and an upturn in 1981. Prices will continue upward although business activity will decline in 1980 and then expand in 1981. Overall, the responses indicate that Arkansas in both years was expected to fare as well as, or better than, the nation as a whole.

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ECONOMIC CONDITION SURVEY

Key Economic Trends in Arkansas as of Year's End, Calendar 1980 and 1981

Please indicate the phrase which most nearly corresponds with your views. As a point of reference, unless specified otherwise, all change is to be estimated for the 1980 and 1981 year-end levels (base year-end = 1979).

1. Total cost of production in Arkansas will be:

1980		1981	1980		1981
	Down		73	Up	82
	About the same			No opinion	

2. Wage rate trend in Arkansas will be:

1980		1981	1980		1981
	Down		70	Up	81
	About the same			No opinion	

3. Short-term working capital loans in Arkansas will be:

1980		1981	1980		1981
58	Down			Up	70
	About the same			No opinion	

4. Interest rates on business loans in Arkansas will:

1980		1981	1980		1981
73	Fall	26		Rise	43
	Stay about the same	31		No opinion	

5. Capital investment funds in Arkansas for plants and equipment will be:

1980		1981	1980		1981
56	Down	20		Up	51
31	About the same	27		No opinion	

6. Arkansas public utility rates will:

1980		1981	1980		1981
	Fall		90	Rise	96
	About the same			No opinion	

7. Consumer price level in Arkansas will be:

1980		1981	1980		1981
	Down more than 5%		36	Up between 5 and 10%	52
	Down 5% or less		30	Up between 10 and 15%	23
	About the same			Up over 15%	
	Up 5% or less			No opinion	

8a. Level of new residential construction activity in Arkansas will be:

1980		1981	1980		1981
75	Down	21		Up	56
	About the same	21		No opinion	

8b. Arkansas' construction experience, relative to that of the U.S., will be:

1980		1981	1980		1981
25	More severe	13	29	About the same	45
45	Less severe	40			

9. Level of commercial-industrial activity in Arkansas as measured by sales and profits will be:

1980		1981	1980		1981
69	Down			Up	52
	About the same	30		No opinion	

10. Unemployment rate in Arkansas (6.3% in April 1980) will be:

1980		1981	1980		1981
	Less than 5%		22	Between 8 and 9%	
30	Between 5 to 7%	53		Over 9%	
42	Between 7 and 8%	30		No opinion	

11. Labor force growth in Arkansas will be:

1980		1981	1980		1981
25	Down		25	Up	48
48	About the same	43		No opinion	

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12. Consumer demand in Arkansas as indicated by retail sales will be:

1980		1981	1980		1981
62	Down			Up	66
30	About the same	27		No opinion	

13. Arkansas' attraction of new business will be:

1980		1981	1980		1981
34	Down			Up	53
53	About the same	36		No opinion	

14. Cost of transportation services in Arkansas:

1980		1981	1980		1981
	Down		82	Up	90
	About the same			No opinion	

15. Utilization of plant capacity in Arkansas will be:

1980		1981	1980		1981
74	Down	18		Up	49
	About the same	32		No opinion	

16. With respect to economic opportunities, Arkansas, in comparison with the rest of the nation, is:

1980		1981
31	Below that of the rest of the country	26
33	About the same level as the rest of the country	26
36	Higher than the rest of the country	48

17. Current dollar values for cash receipts from Arkansas farm marketings, in 1978, totaled $2,678.0 million ($1,399.1 million for livestock and products and $1,278.9 million for crops), and, in 1979, totaled $3,171.7 million ($1,632.8 million for livestock and products and $1,538.9 million for crops). Total cash receipts for 1980 and 1981 in current dollars will:

1980		1981
34	Decrease from the 1979 current dollar level	
36	Remain about the same as 1979 current dollar amount	26
30	Increase from the 1979 current dollar level	68

18. Current dollar cash receipts from Arkansas farm marketings (livestock includes livestock products) with respect to their 1979 levels will (check one or more):

1980		1981
29	Show decreases in both crops and livestock	
	Show decreases in crops	
	Show decreases in livestock	
20	Remain about the same in both	
	Show an increase in crops	
	Show an increase in livestock	
20	Show increases in both crops and livestock	46
	Other (explain)	

List: ____________________

19. The embargo on exports to Russia and Iran will have what impact on Arkansas' farm income in 1980 and 1981?

1980		1981	1980		1981
48	Substantial	31	48	Little or none	65

Major U.S. Economic and Policy Issues

20. Please rank in descending order eight (8) issues, among those listed below that you feel will exert the most influence on U.S. economic conditions. (1 = Most Significant)

1980		1981
75	Inflation	74
53	Recession	49
33	Government deficit spending	42
	Weather effects (agriculture and energy)	
	Ecology and Environment (including government regulations)	
	Labor union activity	
	Foreign competition in domestic markets	
	Consumer awareness movements	
	Release of housing and community development monies	
27	Unemployment	21
26	Energy supply and cost	36
	International exchange rates	
	Balance of trade	
16	Interest rates	13
	New acts and laws by Congress	
	Campaigns and elections	
	International commitments and developments	
	Tax revolt by citizens	
	Other	

List: ____________________

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21. In our society today the single most serious economic problem is:

1980		1981
13	Unemployment	
40	Inflation	36
21	Declining productivity and real growth	26
	Balance of trade deficits	
20	Government spending	23
	Other	

List:

22a. With the recent U.S. experience as regards inflation and unemployment, what are recommended toward reducing inflation? (Rank in descending order from 1 = Most Effective Approach, if more than one choice.)

1980		1981
86	Cut government spending	86
33	Reduce the money supply and tighten consumer credit	26
	Increase taxes	
	Institute price and wage controls	
30	Deregulation of commerce	31
22	Relax environmental controls	20
	Increase import restrictions and higher import duties	
22	Reduce the power of big labor unions	26
	Other	

List:

b. Will the U.S. economy be in a recession?

1980		1981	1980		1981
100	Yes	51		No	44
	No opinion				

c. Also, if your choice is Yes, what is the percent chance* the upturn will commence by year's end 1980? 31% by year's end 1981? 66%

*50% or better.

23. The Dow Jones Industrial Average (approximately 816 in mid May 1980) will be:

1980		1981	1980		1981
	Less than 700		19	Between 850 and 900	23
	Between 700 and 750			Between 900 and 950	36
	Between 750 and 800			More than 950	
39	Between 800 and 850			No opinion	

24. With the recent U.S. experience as regards inflation and unemployment, what are the recommended approaches to reduce unemployment? (If more than once choice, rank in descending order from 1 = Best Approach.)

1980		1981
	Reinstitute the military draft	
	Create more government "public service" jobs	
	Accelerate public works spending	
62	Institute tax credits to stimulate investment	64
38	Let the price system regulate the market	39
	Sponsor job training programs, including OJT	
31	Cut welfare programs	29
	Tighten laws for labor unions	
29	Eliminate minimum wage legislation on teenagers	26
	Increase defense spending	
	Decrease defense spending	
	Other	

List:

25. With respect to the recurring problems of the energy crisis, the federal government should: (Rank in descending order of importance if more than one choice, 1 = Most Important.)

1980		1981
46	Help private business to develop domestic sources of petroleum and other related natural resources	44
33	Fund extensive applications research for using energy resources other than oil, particularly for automobiles and house heating	35
26	Develop and fund better mass transit systems throughout the U.S.	25
49	Allow the free market to regulate fully the price of all petroleum products and services	45
	Levy additional taxes on usage of petroleum products	
	Institute rationing	
	Other	

List:

26. The present deficit in the U.S. balance of trade will:

1980		1981	1980		1981
49	Worsen	31	10	Improve but remain a deficit	38
36	Remain about the same	26		Improve becoming a surplus	

SELECTED ARKANSAS AND U.S. ECONOMIC INDICATORS

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Arkansas Economy: Q-I, 1980	*52*
Index of Total Employment, Arkansas and United States	*53*
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ARKANSAS ECONOMY: Q-I, 1980

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Revised estimates by the U. S. Department of Commerce indicate that Arkansas Personal Income was $14,792 million in 1979. Data now available show Personal Income grew at similar rates in Arkansas and the U.S. during the last half of 1979 and the first part of 1980. Early estimates for the first quarter of 1980 place Personal Income at a $15.7 billion annual rate, well above the $14.6 billion annual rate of the first three months of 1979. However, given the recessionary conditions prevailing at midyear, very little additional growth in this measure of economic activity is anticipated for 1980.

Employment in Arkansas during the first quarter declined for the second successive quarter to a level only 8,000 above that of the same quarter in 1979. The unemployment rate, not seasonally adjusted was at 6.7 percent. This is somewhat lower than that experienced in 1979 but is expected to rise as the year progresses.

Value added by manufacture rose during the initial three months of 1980 after two quarters of decline. However, this indicator remains below its early 1979 levels and it is expected to show declines for the second and third quarters of 1980.

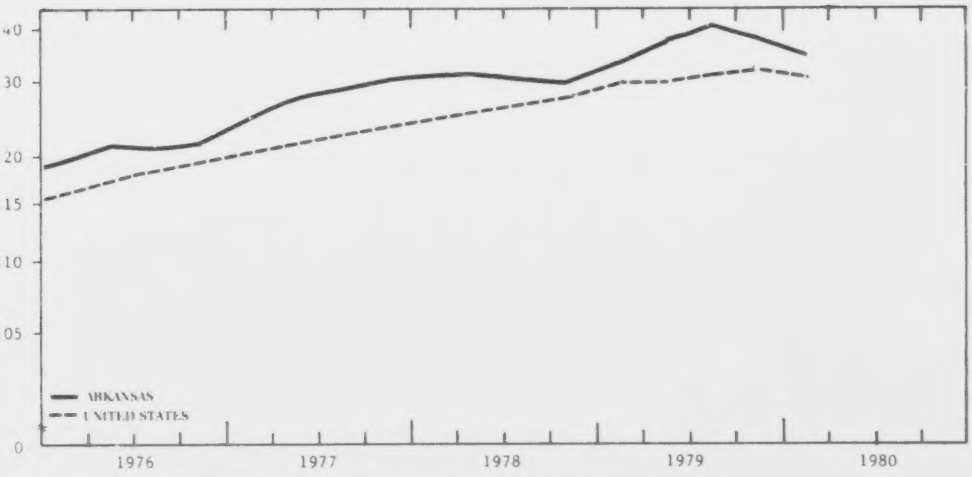
In the first quarter both new loans and net new savings, as reflected by activity with savings and loan associations, fell below that of the same quarter a year ago. Net new savings of $52.2 million were down over 70 percent on a year-to-year basis.

During the quarter ending in March, the dollar value of residential construction was at its lowest level since 1976–without adjustments for inflation. As compared to its peak in the second quarter of 1978, the early 1980 level represented a decline of almost 40 percent. Nonresidential Construction which also declined in early 1980 is expected to continue its decline throughout the year.

Overall, the Arkansas economy appears to have entered a recession in either the last months of 1979 or early in 1980. While the magnitude and duration of the downturn are as yet undetermined, they are currently anticipated to give a moderate recessionary period, not quite as severe as that of 1975 but lasting through this calendar year. Determinate factors of the length and depth of the recession include federal monetary and fiscal policies, consumer attitudes and buying power, as well as agricultural conditions in Arkansas. Monetary policy has been softening; consumer demand has declined in most sectors; savings appear to be on the uprise with consumer debt declining; the rise in energy prices is in a momentary lull; and inventories, for the most part, are not overly out-of-line. Thus, the expectation that the downturn will be a moderate one.

INDEX OF TOTAL EMPLOYMENT, ARKANSAS AND UNITED STATES

Quarterly data, seasonally adjusted, 1967= 100



(Semi-logarithmic scale: equal slopes indicate equal rates of change)

Base Year to Date and Quarterly Changes in Total Employment

Seasonally adjusted, percent

	1967 to 1980 Q-I	1979 Q-I to 1979 Q-II	1979 Q-II to 1979 Q-III	1979 Q-III to 1979 Q-IV	1979 Q-IV to 1980 Q-I
Arkansas	+ 34.9	+ 3.3	+ 1.5	- 2.1	- 1.7
United States	+ 31.5	+ 0.2	+ 0.8	+ 0.5	+ 0.1

EMPLOYMENT BY MAJOR INDUSTRY GROUP IN ARKANSAS, AND UNEMPLOYMENT RATE , ARKANSAS AND UNITED STATES

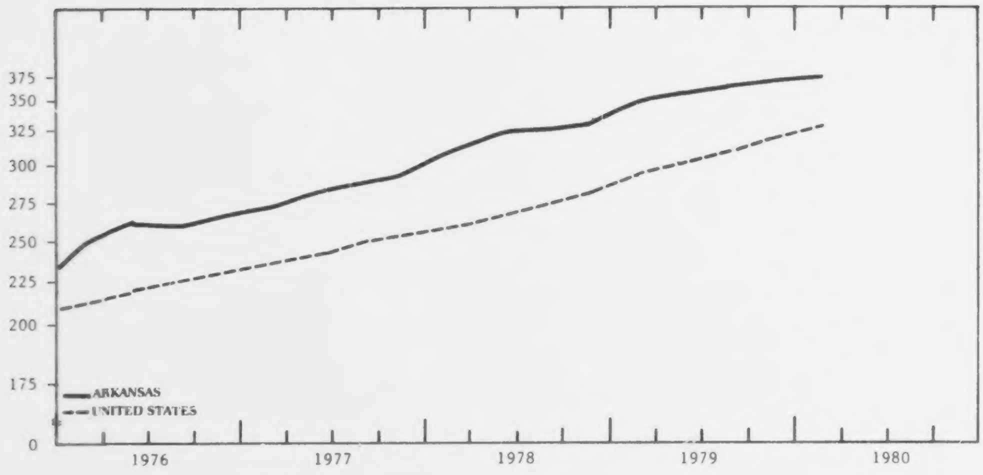
Seasonally adjusted

TIME PERIOD	EMPLOYMENT				UNEMPLOYMENT RATE	
	Wage and Salary		Agricultural	Total	Arkansas	United States
	Manufacturing	Nonmanufacturing				
1970	165,300	367,200	57,900	693,700	5.2	4.9
1971	166,500	372,000	58,900	702,400	5.5	6.0
1972	177,250	382,900	61,375	724,850	4.9	5.7
1973	197,200	417,500	59,000	783,700	4.2	4.8
1974	201,300	432,200	56,700	786,800	5.0	5.6
1975	175,500	444,500	61,000	776,700	8.9	8.5
1976	187,300	445,100	65,600	794,000	6.2	7.7
1977	208,900	483,400	62,800	837,700	6.0	7.0
1978	216,500	507,350	61,250	868,400	6.4	6.0
1979	217,750	526,700	65,800	904,000	6.3	5.8
1980 Q-I	217,300	537,400	63,750	888,750	6.7*	6.1

*Actual Rate. Effective January 1977 the Arkansas Employment Security Division revised its adjustments to employment data based on methods developed by the U.S. Bureau of Labor Statistics. As a result, the Arkansas unemployment rate cannot be seasonally adjusted at this time.

INDEX OF PERSONAL INCOME, ARKANSAS AND UNITED STATES

Quarterly data, seasonally adjusted,1967= 100



(Semi-logarithmic scale: equal slopes indicate equal rates of change)

Base Year to Date and Quarterly Changes in Personal Income

Seasonally adjusted, percent

	1967 to 1980 Q-I	1979 Q-I to 1979 Q-II	1979 Q-II to 1979 Q-III	1979 Q-III to 1979 Q-IV	1979 Q-IV to 1980 Q-I
Arkansas	+ 270.8	- 1.2^R	+ 2.9^R	+ 2.8^R	+ 2.9
United States	+ 226.9	+ 2.2	+ 2.8	+ 2.8	+ 2.8

PERSONAL INCOME IN ARKANSAS

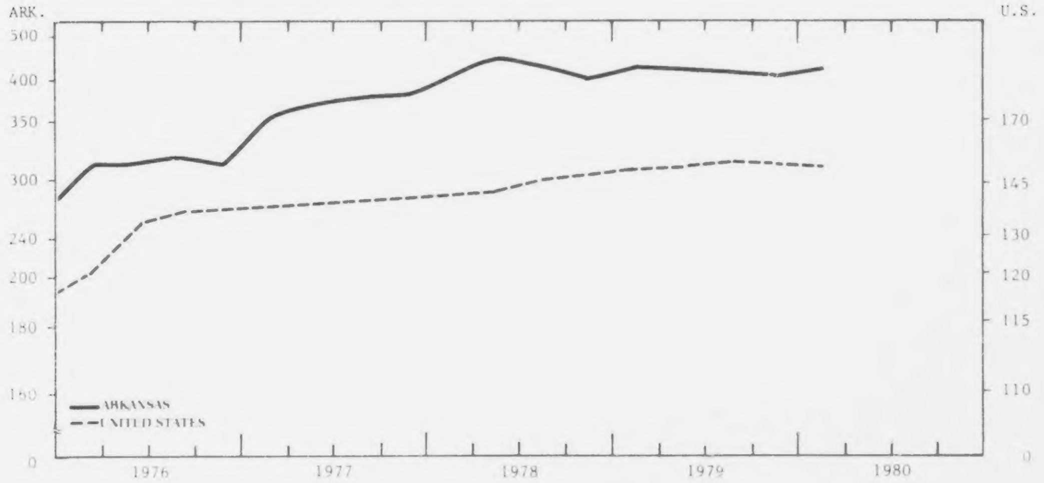
Millions of dollars, seasonally adjusted

Quarter	1972	1973	1974	1975	1976	1977	1978	1979	1980
Jan-Mar	1,585	1,789	2,142	2,070	2,508	2,837	3,118	3,654^R	3,927
Apr-Jun	1,599	1,894	2,242	2,373	2,667	2,948	3,208	3,609^R	
Jul-Sep	1,662	1,978	2,213	2,391	2,626	2,984	3,315	3,713^R	
Oct-Dec	1,794	2,020	2,234	2,368	2,676	3,070	3,406	3,816^R	
Annual	6,640	7,681	8,831	9,202	10,477	11,839	13,047	14,792^R	

^R Revised based on updated state personal income data, Table 2-A, BEA, April, 1980.

INDEX OF VALUE ADDED BY MANUFACTURE, ARKANSAS, AND INDEX OF MANUFACTURING PRODUCTION, UNITED STATES

Quarterly data, seasonally adjusted, 1967 = 100



(Semi-logarithmic scale: equal slopes indicate equal rates of change)

Base Year to Date and Quarterly Changes in Manufacturing

Seasonally adjusted, percent

	1967 to 1980 Q-1	1979 Q-I to 1979 Q-II	1979 Q-II to 1979 Q-III	1979 Q-III to 1979 Q-IV	1979 Q-IV to 1980 Q-I
Arkansas	+ 322.2	- 0.5	- 2.7	- 0.5	+ 3.3
United States	+ 50.7	+ 0.3	+ 0.3	0.0	- 0.9

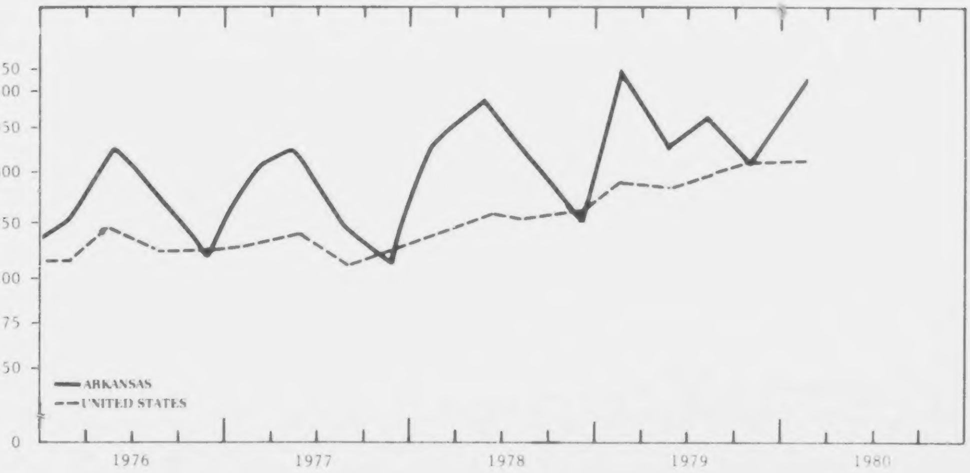
VALUE ADDED BY MANUFACTURE IN ARKANSAS

Millions of dollars

	Seasonally adjusted									Not seasonally adjusted
Quarter	1972	1973	1974	1975	1976	1977	1978	1979	1980	1979
Jan-Mar	728.7	825.9	959.6	899.5	1,158.2	1,362.9	1,598.4	1,666.0	1,655.1	1,537.1
Apr-Jun	724.9	858.4	975.8	895.1	1,161.4	1,443.1	1,659.2	1,656.2		
Jul-Sep	704.0	819.3	963.0	925.7	1,194.4	1,451.8	1,619.3	1,611.1		
Oct-Dec	724.7	856.9	924.0	985.2	1,160.8	1,468.6	1,597.3	1,602.4		
Annual	2,882.3	3,360.5	3,822.4	3,705.5	4,674.8	5,726.4	6,474.2	6,535.7		

INDEX OF CASH RECEIPTS FROM FARM MARKETINGS
ARKANSAS AND UNITED STATES

Quarterly data, seasonally adjusted 1967 = 100



(Semi-logarithmic scale: equal slopes indicate equal rates of change)

Base Year to Date and Quarterly Changes in Cash Receipts

Seasonally adjusted, percent

	1967 to 1980 Q-I	1979 Q-I to 1979 Q-II	1979 Q-II to 1979 Q-III	1979 Q-III to 1979 Q-IV	1979 Q-IV to 1980 Q-I
Arkansas	+ 327.3	- 27.8	+ 13.7	- 15.5	+ 40.3
United States	+ 210.9	+ 4.1	- 0.3	+ 2.5	+ 1.8

CASH RECEIPTS FROM FARM MARKETINGS
IN ARKANSAS

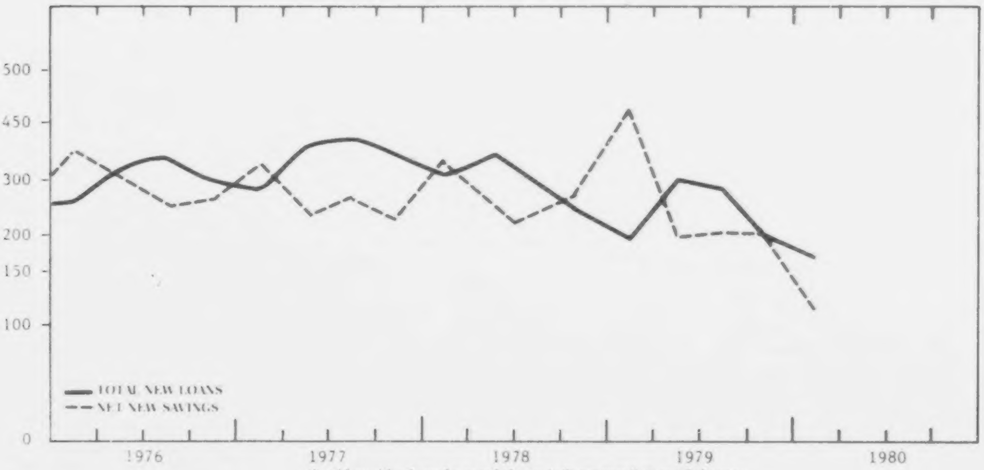
Thousands of dollars

	Seasonally adjusted									Not seasonally adjusted
Quarter	1972	1973	1974	1975	1976	1977	1978	1979	1980	1980
Jan-Mar	314,037	385,687	718,418	529,492	565,575	686,105	790,387	1,038,085	989,950	705,500
Apr-Jun	323,552	488,760	705,678	584,346	740,954	703,457	899,118	532,344		
Jul-Sep	323,286	545,500	568,678	609,324	621,624	578,357	721,275	835,030		
Oct-Dec	369,370	580,100	618,796	508,651	497,214	500,169	601,443	704,385		
Annual	1,330,245	2,009,047	2,611,570	2,231,813	2,425.367	2,468,088	3,012,223	3,231,844		

INDEXES OF ACTIVITY OF ARKANSAS SAVINGS AND LOAN ASSOCIATIONS

TOTAL NEW LOANS AND NET NEW SAVINGS

Quarterly data, not seasonally adjusted 1967 = 100



(Semi-logarithmic scale: equal slopes indicate equal rates of change)

Base Year to Date and Quarterly Changes in Activity of Arkansas S & L Associations

Not seasonally adjusted, percent

	1967 to 1980 Q-I	1979 Q-I to 1979 Q-II	1979 Q-II to 1979 Q-III	1979 Q-III to 1979 Q-IV	1979 Q-IV to 1980 Q-I
Total New Loans	+ 69.8	+ 50.8	- 7.5	- 28.1	- 15.4
Net New Savings	+ 15.1	- 60.4	+ 9.7	+ 2.7	- 45.0

ECONOMIC ACTIVITY OF

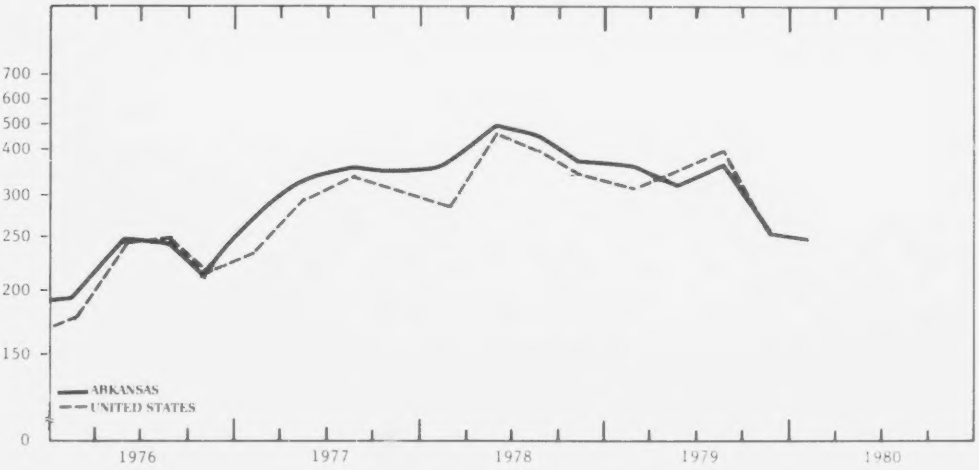
ARKANSAS SAVINGS AND LOAN ASSOCIATIONS

Thousands of dollars

TIME PERIOD	TOTAL NEW LOANS		NET NEW SAVINGS	
	Current $	1967 $	Current $	1967 $
1973	384,229	287,788	223,736	168,993
1974	300,152	203,915	188,400	128,872
1975	413,366	255,678	309,304	192,119
1976	606,400	355,280	393,300	231,050
1977	815,800	448,590	405,000	223,492
1978	729,300	373,760	416,900	213,610
1979	625,900	290,560	436,830	204,525
1980 Q-I	118,900	50,280	52,200	22,070

INDEX OF RESIDENTIAL CONSTRUCTION CONTRACTS
ARKANSAS AND UNITED STATES

Quarterly data, not seasonally adjusted 1967 = 100



(Semi-logarithmic scale; equal slopes indicate equal rates of change)

Base Year to Date and Quarterly Changes in Residential Construction

	Not seasonally adjusted, percent				
	1967 to 1980 Q-I	1979 Q-I to 1979 Q-II	1979 Q-II to 1979 Q-III	1979 Q-III to 1979 Q-IV	1979 Q-IV to 1980 Q-I
Arkansas	+ 145.2	- 4.8	+ 15.1	- 32.8	- 3.5
United States	+ 149.3*	+ 33.5	- 4.7	- 39.6	N.A.

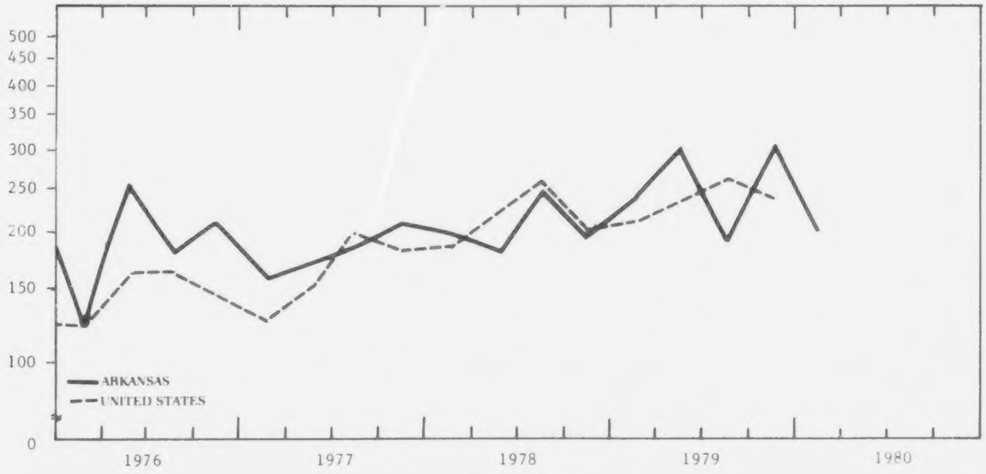
RESIDENTIAL CONSTRUCTION CONTRACTS
IN ARKANSAS

	Thousands of dollars									
	Seasonally adjusted									Not seasonally adjusted
Quarter	1972	1973	1974	1975	1976	1977	1978	1979	1980	1980
Jan-Mar	105,596	124,660	93,249	84,488	116,379	160,861	220,739	205,119	144,050	132,100
Apr-Jun	123,735	122,990	94,963	85,740	117,164	173,558	236,915	153,917		
Jul-Sep	127,702	111,070	84,214	98,557	122,732	182,210	227,633	193,364		
Oct-Dec	143,130	91,317	82,505	104,656	134,927	217,222	236,718	154,130		
Annual	500,163	450,037	354,931	373,441	491,202	733,851	922,005	706,530		

*1967 to 1979 Q-IV.

INDEX OF NONRESIDENTIAL CONSTRUCTION CONTRACTS
ARKANSAS AND UNITED STATES

Quarterly data, not seasonally adjusted 1967 = 100



(Semi-logarithmic scale: equal slopes indicate equal rates of change)

Base Year to Date and Quarterly Changes in Nonresidential Construction Contracts

Not seasonally adjusted, percent

	1967 to 1980 Q-I	1979 Q-I to 1979 Q-II	1979 Q-II to 1979 Q-III	1979 Q-III to 1979 Q-IV	1979 Q-IV to 1980 Q-I
Arkansas	+ 100.7	+ 23.6	- 36.1	+ 60.1	- 35.8
United States	+ 140.5*	+ 19.7	- 2.7	- 9.0	N.A.

NONRESIDENTAL CONSTRUCTION CONTRACTS
IN ARKANSAS

Thousands of dollars, not seasonally adjusted

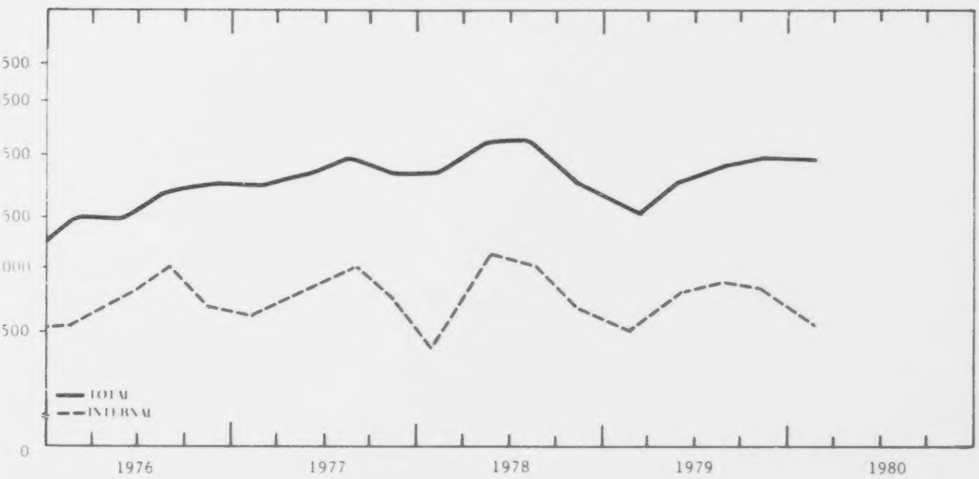
Quarter	1972	1973	1974	1975	1976	1977	1978	1979	1980
Jan-Mar	33,213	47,676	56,094	79,225	43,591	57,486	72,851	88,988	72,300
Apr-Jun	45,800	40,140	63,607	67.424	93,906	63,726	60,479	109,976	
Jul-Sep	51,564	63,776	106,530	45,556	67,913	67,632	90,471	70,296	
Oct-Dec	57,002	54,446	56,247	89,446	79,004	76,866	69,041	112,549	
Annual	187,579	206,038	272,478	281,661	284,414	265,710	292,842	381,809	

*1967 to 1979 Q-IV.

WATERBORNE COMMERCE

McCLELLAN-KERR ARKANSAS RIVER NAVIGATION SYSTEM

(Quarterly data in thousands of short tons, not seasonally adjusted)



(Semi-logarithmic scale: equal slopes indicate equal rates of change)

Base Year to Date and Quarterly Changes in Total and Internal Tonnages

Not seasonally adjusted, percent

Base : Ave Qtr 1971

	1971 to 1980 Q-I	1979 Q-I to 1979 Q-II	1979 Q-II to 1979 Q-III	1979 Q-III to 1979 Q-IV	1979 Q-IV to 1980 Q-I
Total	+ 167.5	+ 9.3	+ 13.5	+ 4.1	- 2.2
Internal	- 10.5	+ 45.3	+ 18.1	- 3.4	- 35.0

FREIGHT TRAFFIC

ARKANSAS RIVER COMMERCE

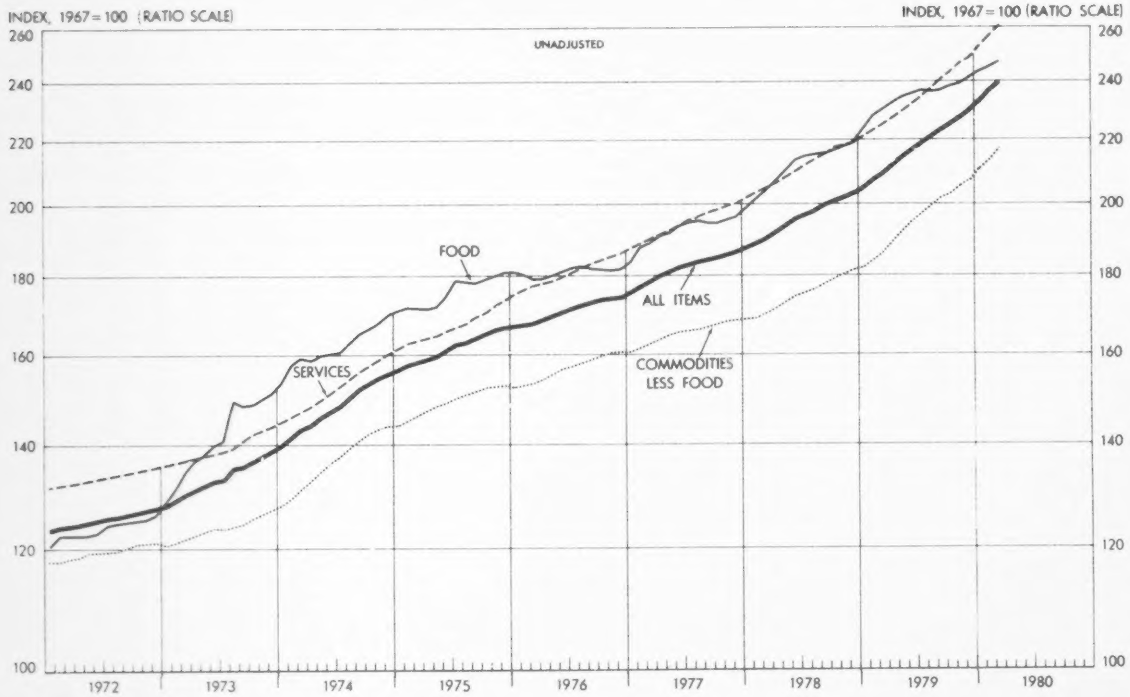
Thousands of short tons, not seasonally adjusted

TIME PERIOD	TRAFFIC TONNAGES*			
	INBOUND	OUTBOUND	INTERNAL	TOTAL
1972	1,174	1,031	3,463	5,668
1973	1,802	656	2,674	5,132
1974	1,950	775	2,959	6,060
1975	1,440	870	2,465	5,204
1976	1,988	1,663	3,033	7,078
1977	2,841	2,339	3,463	9,138
1978	2,595	3,899	3,170	10,216
1979	2,026	3,456	2,932	8,926
1980				
Q-I	455	1,210	543	2,438

*Total tonnage includes "through traffic"--shipments which originate and terminate outside the Arkansas River Commerce Area.

CONSUMER PRICES

In March, the consumer price index for all urban consumers rose 1.4 percent (also 1.4 percent seasonally adjusted). Food prices rose 1.0 percent (also 1.0 percent seasonally adjusted). Nonfood commodity prices rose 1.4 percent (1.3 percent seasonally adjusted) and services prices were up 1.8 percent (1.9 percent seasonally adjusted).



SEE NOTE ON TABLE BELOW
SOURCE: DEPARTMENT OF LABOR

[1967=100]

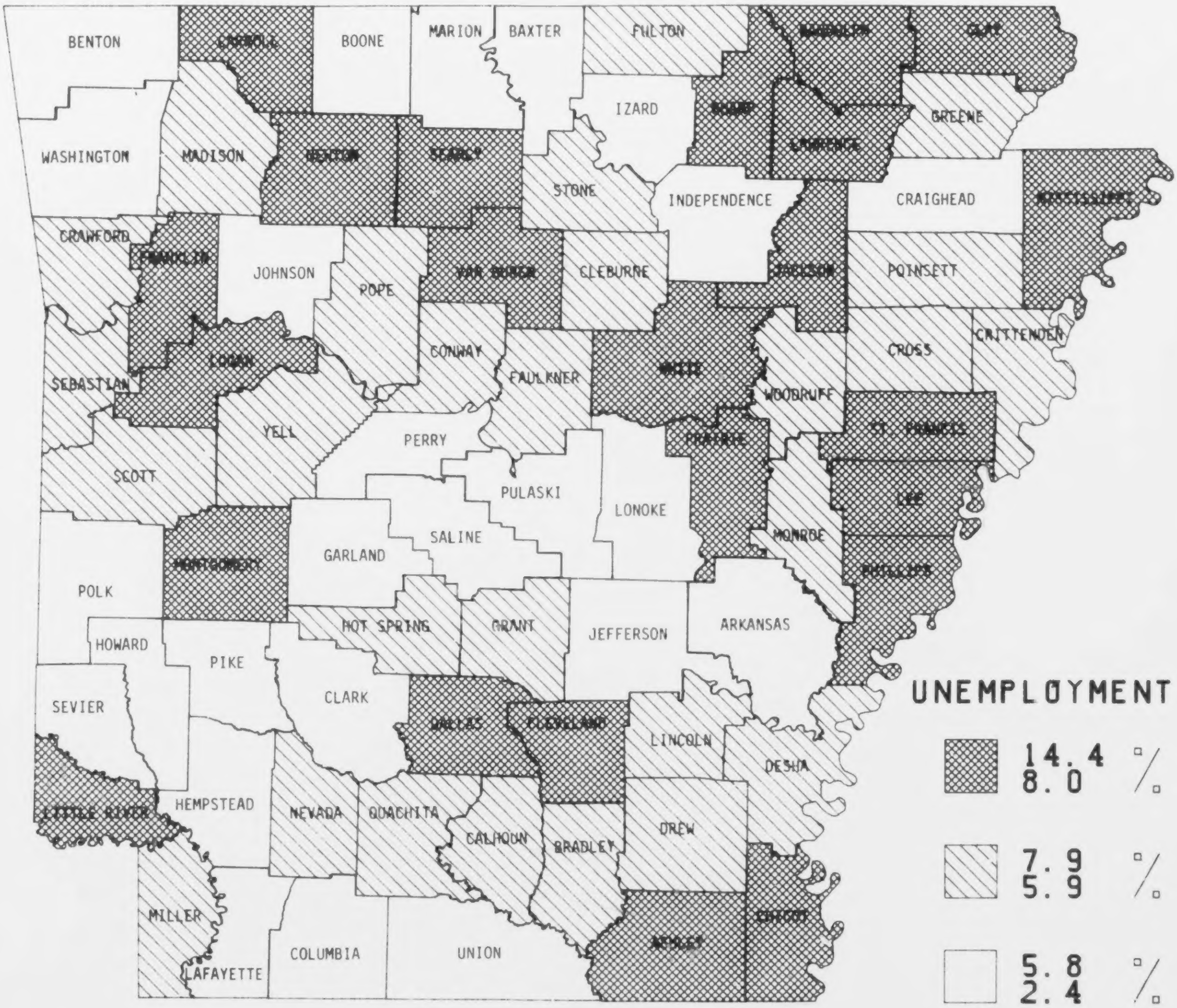
Period	All items	Food	Commodities less food	Services	All commodities	Food			Commodities less food			Services
						All	Food at home	Food away from home	All	Durable	Nondurable	
1972	125. 3	123. 5	119. 4	133. 3	120. 9	123. 5	121. 6	131. 1	119. 4	118. 9	119. 8	133. 3
1973	133. 1	141. 4	123. 5	139. 1	129. 9	141. 4	141. 4	141. 4	123. 5	121. 9	124. 8	139. 1
1974	147. 7	161. 7	136. 6	152. 1	145. 5	161. 7	162. 4	159. 4	136. 6	130. 6	140. 9	152. 1
1975	161. 2	175. 4	149. 1	166. 6	158. 4	175. 4	175. 8	174. 3	149. 1	145. 5	151. 7	166. 6
1976	170. 5	180. 8	156. 6	180. 4	165. 2	180. 8	179. 5	186. 1	156. 6	154. 3	158. 3	180. 4
1977	181. 5	192. 2	165. 1	194. 3	174. 7	192. 2	190. 2	200. 3	165. 1	163. 2	166. 5	194. 3
1978	195. 4	211. 4	174. 7	210. 9	187. 1	211. 4	210. 2	218. 4	174. 7	173. 9	174. 3	210. 9
1979	217. 4	234. 5	195. 1	234. 2	208. 4	234. 5	232. 9	242. 9	195. 1	191. 1	198. 7	234. 2
	Unadjusted				Seasonally adjusted							
1979: Mar	209. 1	230. 4	185. 9	225. 1	201. 3	230. 6	229. 9	235. 9	186. 8	185. 8	186. 6	225. 5
Apr	211. 5	232. 3	188. 9	227. 0	203. 4	232. 0	231. 0	238. 0	189. 1	187. 3	190. 0	227. 5
May	214. 1	234. 3	191. 6	229. 5	205. 3	233. 5	232. 1	240. 4	191. 1	188. 5	193. 2	230. 2
June	216. 6	235. 4	194. 7	232. 1	207. 4	234. 2	232. 4	242. 2	193. 7	190. 0	197. 2	232. 6
July	218. 9	236. 9	197. 0	234. 7	209. 6	235. 3	233. 0	244. 3	196. 2	191. 5	201. 1	235. 1
Aug	221. 1	236. 3	199. 5	237. 6	211. 5	235. 5	232. 5	246. 1	198. 7	193. 1	205. 2	237. 7
Sept	223. 4	237. 1	201. 8	240. 7	214. 0	237. 9	235. 4	247. 5	201. 2	194. 2	208. 6	240. 5
Oct	225. 4	238. 2	203. 4	243. 6	215. 8	239. 8	237. 1	249. 9	202. 9	195. 7	210. 3	243. 5
Nov	227. 5	239. 1	205. 4	246. 2	217. 9	241. 4	238. 5	252. 0	205. 1	198. 4	212. 0	246. 1
Dec	229. 9	241. 7	207. 2	249. 3	220. 4	244. 8	242. 3	254. 4	207. 3	200. 3	215. 0	249. 5
1980: Jan	233. 2	243. 8	210. 4	253. 1	223. 5	244. 8	241. 8	256. 9	211. 5	202. 5	221. 8	252. 9
Feb	236. 4	244. 9	213. 8	256. 8	226. 1	244. 7	240. 9	258. 6	215. 2	203. 5	228. 4	256. 8
Mar	239. 8	247. 3	216. 7	261. 3	228. 8	247. 1	243. 5	260. 6	217. 9	204. 0	233. 8	261. 6

NOTE.—Data beginning January 1978 relate to all urban consumers. Earlier data related to urban wage earners and clerical workers.

Source: Department of Labor, Bureau of Labor Statistics.

LABOR FORCE ESTIMATES
MARCH 1980

THE CIVILIAN LABOR FORCE FOR THE STATE OF ARKANSAS INCREASED 21,300 IN MARCH TO TOTAL 945,100. TOTAL EMPLOYMENT FOR MARCH WAS UP 29,900 OVER THE FEBRUARY LEVEL; UNEMPLOYMENT DECLINED 8,600 TO 56,600; AND THE STATE'S UNEMPLOYMENT RATE WAS 6.0 PERCENT, 1.1 PERCENT BELOW THE FEBRUARY LEVEL. MARCH UNEMPLOYMENT RATES FOR THE 75 COUNTIES RANGED FROM A LOW OF 2.4 PERCENT IN HOWARD TO A HIGH OF 14.4 PERCENT IN DALLAS. FORTY-NINE OF THE COUNTIES HAD UNEMPLOYMENT RATES EQUAL TO, OR HIGHER THAN, THE STATE RATE. UNEMPLOYMENT RATES IN THE STATE'S FOUR STANDARD METROPOLITAN STATISTICAL AREAS RANGED FROM A LOW OF 3.8 PERCENT IN THE LITTLE ROCK-NORTH LITTLE ROCK SMSA TO A HIGH OF 6.8 PERCENT IN THE FORT SMITH SMSA. THE RATES FOR THE FAYETTEVILLE-SPRINGDALE AND THE PINE BLUFF SMSAs WERE 4.2 AND 4.9 PERCENT, RESPECTIVELY.


BENTON
CARROLL
BOONE
MARION
BAXTER
FULTON
RANDOLPH
CLAY
IZARD
SHARP
GREENE
LAWRENCE
WASHINGTON
MADISON
NEWTON
SEARCY
STONE
INDEPENDENCE
CRAIGHEAD
MISSISSIPPI
CRAWFORD
FRANKLIN
JOHNSON
POPE
VAN BUREN
CLEBURNE
JACKSON
POINSETT
SEBASTIAN
LOGAN
CONWAY
FAULKNER
WHITE
CROSS
CRITTENDEN
WOODRUFF
YELL
PERRY
PRAIRIE
ST. FRANCIS
SCOTT
PULASKI
LONOKE
LEE
MONTGOMERY
SALINE
GARLAND
MONROE
POLK
PHILLIPS
HOT SPRING
GRANT
JEFFERSON
ARKANSAS
HOWARD
PIKE
SEVIER
CLARK
DALLAS
CLEVELAND
LINCOLN
DESHA
LITTLE RIVER
HEMPSTEAD
NEVADA
OUACHITA
CALHOUN
BRADLEY
DREW
MILLER
ASHLEY
CHICOT
LAFAYETTE
COLUMBIA
UNION
UNEMPLOYMENT
14.4 %
8.0 %
7.9 %
5.9 %
5.8 %
2.4 %

UNIVERSITY OF ARKANSAS
COMPUTER GENERATED MAP

BEST AVAILABLE COPY

LABOR FORCE ESTIMATES
March 1980

State and SMSA's	Civilian Labor Force	Unemployment Rate	Total Employment
UNITED STATES	103,351,000	6.6	96,546,000
STATE OF ARKANSAS[1]	945,100	6.0	888,500
Fayetteville-Springdale SMSA (Benton & Washington Counties)	75,850	4.2	72,650
Fort Smith SMSA (Crawford & Sebastian Counties in Arkansas and LeFlore & Sequoyah Counties in Oklahoma)	80,500	6.8	75,000
Little Rock-North Little Rock SMSA (Pulaski & Saline Counties)	182,500	3.8	175,500
Pine Bluff SMSA (Jefferson County)	38,100	4.9	36,225

County	Civilian Labor Force	Unemployment Rate	Total Employment	County	Civilian Labor Force	Unemployment Rate	Total Employment
Arkansas	11,050	3.6	10,650	Lee	4,700	13.3	4,075
Ashley	9,575	13.1	8,325	Lincoln	3,625	6.2	3,400
Baxter	9,200	4.3	8,800	Little River	4,975	10.6	4,450
Benton	31,300	4.0	30,050	Logan	6,625	8.3	6,075
Boone	11,650	4.1	11,175	Lonoke	14,400	4.3	13,775
Bradley	5,350	7.0	4,975	Madison	4,875	6.2	4,575
Calhoun	2,175	6.9	2,025	Marion	4,550	4.4	4,350
Carroll	6,575	9.5	5,950	Miller	13,350	7.9	12,300
Chicot	6,750	9.3	6,125	Mississippi	24,575	8.0	22,600
Clark	9,325	4.6	8,900	Monroe	5,000	7.5	4,625
Clay	8,550	9.1	7,775	Montgomery	2,375	10.5	2,125
Cleburne	5,825	7.7	5,375	Nevada	3,975	6.3	3,725
Cleveland	1,900	10.5	1,700	Newton	1,850	10.8	1,650
Columbia	12,025	4.4	11,500	Ouachita	11,225	6.9	10,450
Conway	7,625	5.9	7,175	Perry	3,025	5.8	2,850
Craighead	29,700	5.2	28,150	Phillips	12,800	11.1	11,375
Crawford	14,550	7.9	13,400	Pike	4,150	4.8	3,950
Crittenden	23,625	7.6	21,825	Poinsett	11,325	6.0	10,650
Cross	8,925	6.4	8,350	Polk	5,875	5.5	5,550
Dallas	3,825	14.4	3,275	Pope	15,750	6.2	14,775
Desha	7,150	7.3	6,625	Prairie	3,175	9.4	2,875
Drew	8,000	6.9	7,450	Pulaski	159,750	3.8	153,600
Faulkner	19,675	6.2	18,450	Randolph	7,000	8.6	6,400
Franklin	5,700	11.0	5,075	St. Francis	12,150	9.7	10,975
Fulton	2,925	7.7	2,700	Saline	22,750	3.7	21,900
Garland	30,525	4.1	29,275	Scott	2,950	7.6	2,725
Grant	4,900	6.1	4,600	Searcy	2,425	9.3	2,200
Greene	12,600	6.3	11,800	Sebastian	39,025	6.9	36,350
Hempstead	10,050	5.0	9,550	Sevier	5,700	5.3	5,400
Hot Spring	10,325	6.1	9,700	Sharp	3,775	10.6	3,375
Howard	7,150	2.4	6,975	Stone	3,025	7.4	2,800
Independence	13,550	5.7	12,775	Union	22,900	4.4	21,900
Izard	3,650	5.5	3,450	Van Buren	3,250	9.2	2,950
Jackson	8,750	9.1	7,950	Washington	44,550	4.4	42,600
Jefferson	38,100	4.9	36,225	White	20,825	10.0	18,750
Johnson	7,600	5.3	7,200	Woodruff	4,600	6.5	4,300
Lafayette	3,375	5.2	3,200	Yell	7,125	6.3	6,675
Lawrence	7,575	8.9	6,900				

Source: The Research and Statistics Section, Arkansas Employment Security Division.